FIG. 1

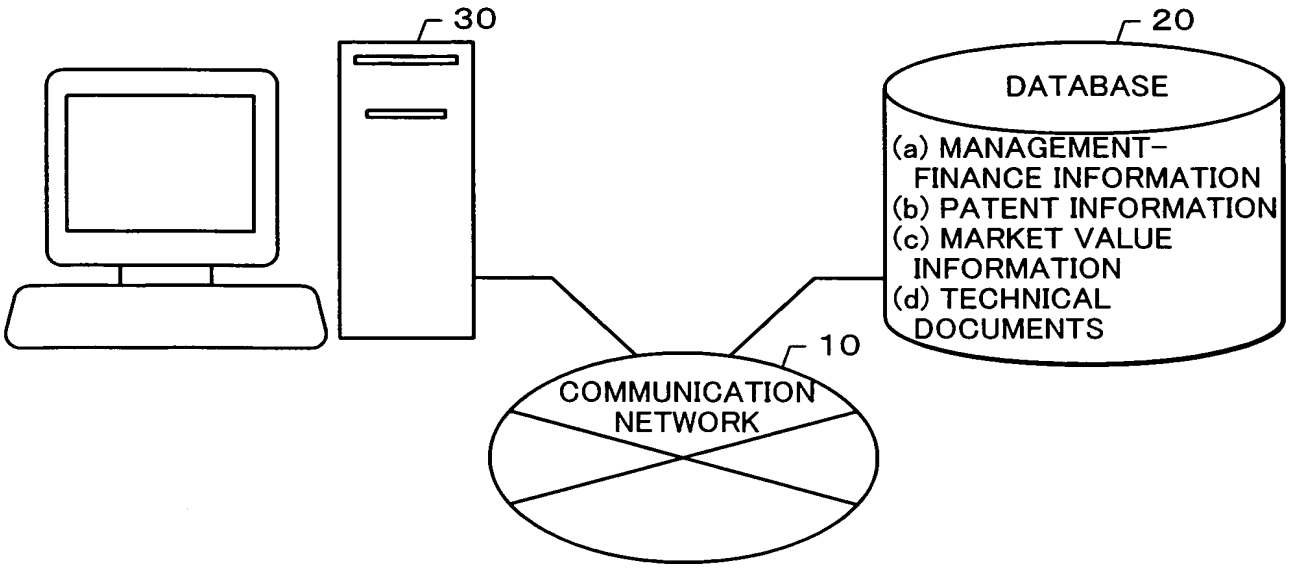

30
20
DATABASE
(a) MANAGEMENT-FINANCE INFORMATION
(b) PATENT INFORMATION
(c) MARKET VALUE INFORMATION
(d) TECHNICAL DOCUMENTS
10
COMMUNICATION NETWORK

FIG. 2

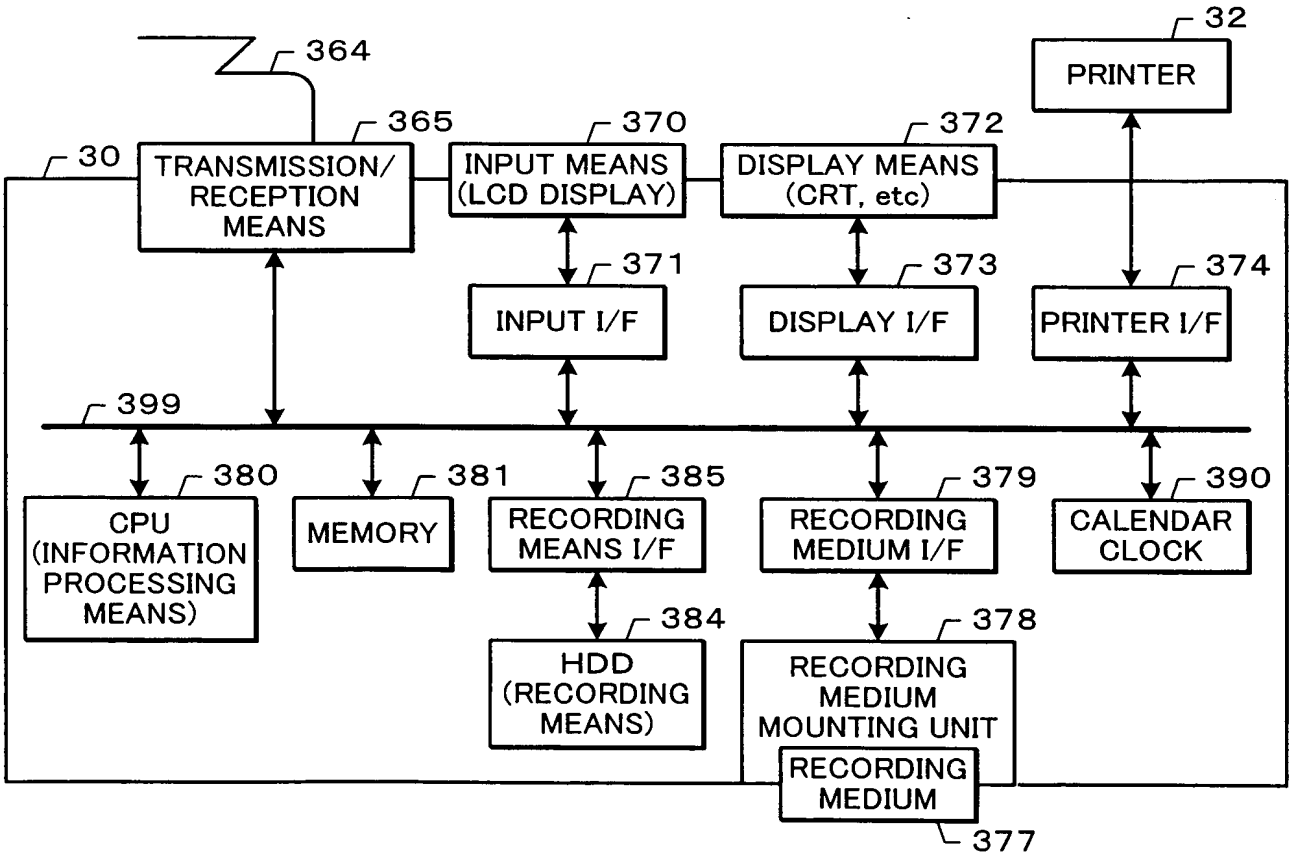

32
PRINTER
364
365
370
372
30
TRANSMISSION/ RECEPTION MEANS
INPUT MEANS (LCD DISPLAY)
DISPLAY MEANS (CRT, etc)
371
373
374
INPUT I/F
DISPLAY I/F
PRINTER I/F
399
380
381
385
379
390
CPU (INFORMATION PROCESSING MEANS)
MEMORY
RECORDING MEANS I/F
RECORDING MEDIUM I/F
CALENDAR CLOCK
384
378
HDD (RECORDING MEANS)
RECORDING MEDIUM MOUNTING UNIT
RECORDING MEDIUM
377

FIG. 3

(a) MANAGEMENT-FINANCE INFORMATION

(A) Information on Size of Company	(B) Financial Information of Company		(C) Combined Information of Company
Number of employees	Sales volume	Total assets	Sales volume per employee
Number of officers	Sales profit	Tangible fixed assets	R&D cost per employee
Capital	Operating profit	Amount of capital investment	Sales profit per employee
Number of plants/offices	Gross operating profit	Depreciation costs	Operating profit per employee
Ground floor area	Sales profit ratio	Patent royalty income	Gross operating profit per employee
Total floor area	Operating profit ratio	Financial assets (liquid assets and liquid liabilities)	
Ownership ratio of premises	Gross operating profit ratio	Interests paid/discounts	
Ownership ratio of building	Total market value to total assets ratio	Long-term prime rate (long-term borrowing rate)	
Number of employees (consolidated basis)	Total market value to stockholders' equity ratio	Short-term prime rate	
Number of officers (consolidated basis)	Total market value to sales volume ratio	Interest on bonds	
Capital (consolidated basis)	Total market value to gross operating profit ratio	10-year government bond yield ratio	
Number of plants/offices (consolidated basis)	Total market value to operating profit ratio	Personnel costs, (including officers' compensation and labor costs)	
Ground floor area (consolidated basis)	Gross operating profit to total assets ratio	Welfare expenses	
Total floor area (consolidated basis)	Gross operating profit to stockholders' equity ratio	Capital stock	
Ownership ratio of premises (consolidated basis)	Operating profit to total assets ratio	Total number of outstanding shares	
Ownership ratio of building (consolidated basis)	Operating profit to Stockholders' equity ratio	Stock price (Nikkei Stock Average)	
	Stockholders' equity ratio	Taxes and public charges	
	Balance of total market value and stockholders' equity		
	R&D cost		
	R&D cost to sales volume ratio		
	R&D cost to operating profit ratio		
	R&D cost to gross operating profit ratio		

FIG. 4A

(b) PATENT INFORMATION

(A) Application Related Matters	
Filing date	Number of filings
Application number	Number of request for examination
Title of the invention	Number of filings based on IPC
Inventors	Number of filings based on keywords
Applicants	Number of claims filed
Scope of claims	Years spent on examination requests
Abstract	Number of inventors
IPC	Number of applicants (number of joint applications)
FI	Number of domestic priority-claiming applications
F term	Number of domestic priority bases claimed in applications
Agents	Number of priority bases from foreign countries
Publication date	Number of applications in which an exception to loss of novelty is requested
Publication number	Number of applications in which examination is requested before laid-open
Existence of request for examination	Number of divisional applications
Date of request for examination	Number of withdrawn/abandoned applications
Priority date	Number of converted applications
Priority number	Number of expedited examinations
Date of publication of translations of PCT international application	Number of filings (in each country)
Number for publication of translations of PCT international application	Number of inventors in applications (in each country)
Date of domestic re-publication of PCT international application	Number of applicants in applications (in each country)
Number for domestic re-publication of PCT international application	Number of priority-claiming applications (in each country)
International filing date	Number of priority bases claimed in applications (in each country)
International application number	Number of divisional applications (in each country)
International publication date	
International publication number	
Designated countries	

FIG. 4B

(b) PATENT INFORMATION

(B) Registration Related Matters	
Registration date	Number of registrations
Issue date of registration	Number of claims registered
Registration number	Number of expired patents after registration
Scheduled day of expiration of right	Years spent from application to registration
Date of publication of examined application	Patent registration rate
Publication number of examined application	Patent allowance rate
Annual maintenance fee payment status	Years spent from request for examination to registration
Number of final decisions for rejection	Number of applications in which preferential examination is conducted
Date of final decision for rejection	Number of rejections issued
Number of claims decided to be finally rejected	Number of amendments filed
Number of appeals against final decision for rejection	Number of amendments filed (for formalities)
number of abandoned/withdrawn applications after request for examination	Number of written oppositions filed
Number of abandoned/withdrawn claims after request for examination	Number of appeals and trials
Number of invalidation trials	Number of registrations for creating patent right
Appeal/trial number	Number of registrations for extending term of patent right
Date of decision to appeal/trial	Number of transferred patents
Number of claims demanded for invalidation trial	Number of registrations (in each country)
Number of appeals to dismissal of amendment or trials for correction	Years required for registration (in each country)
Number of oppositions	Years spent on examination (in each country)
Number of claims demanded for opposition	Number of rejections issued (in each country)
Inventors of registered patent	Number of amendments filed (in each country)
Number of inventors of registered patent	Number of amendments filed (for formalities) (in each country)
Applicants of registered patent	Number of oppositions filed (in each country)
References cited	Number of applications in which preferential examination is conducted
	Number of rejections issued

FIG. 5

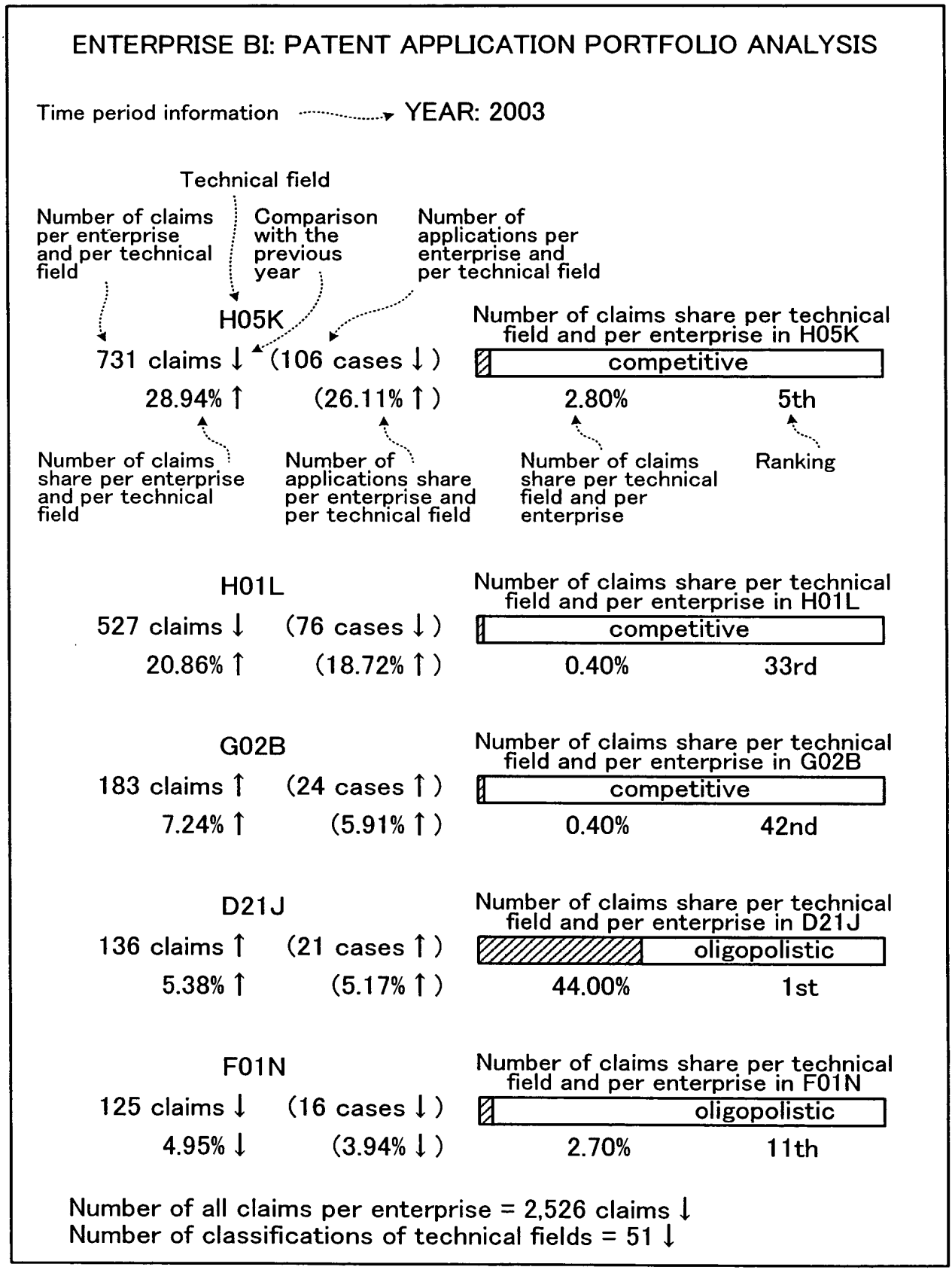

ENTERPRISE BI: PATENT APPLICATION PORTFOLIO ANALYSIS
Time period information
YEAR: 2003
Technical field
Number of claims per enterprise and per technical field
Comparison with the previous year
Number of applications per enterprise and per technical field
H05K
731 claims ↓
(106 cases ↓)
28.94% ↑
(26.11% ↑)
Number of claims share per technical field and per enterprise in H05K
competitive
2.80%
5th
Number of claims share per enterprise and per technical field
Number of applications share per enterprise and per technical field
Number of claims share per technical field and per enterprise
Ranking
H01L
527 claims ↓
(76 cases ↓)
20.86% ↑
(18.72% ↑)
Number of claims share per technical field and per enterprise in H01L
competitive
0.40%
33rd
G02B
183 claims ↑
(24 cases ↑)
7.24% ↑
(5.91% ↑)
Number of claims share per technical field and per enterprise in G02B
competitive
0.40%
42nd
D21J
136 claims ↑
(21 cases ↑)
5.38% ↑
(5.17% ↑)
Number of claims share per technical field and per enterprise in D21J
oligopolistic
44.00%
1st
F01N
125 claims ↓
(16 cases ↓)
4.95% ↓
(3.94% ↓)
Number of claims share per technical field and per enterprise in F01N
oligopolistic
2.70%
11th
Number of all claims per enterprise = 2,526 claims ↓
Number of classifications of technical fields = 51 ↓

FIG. 6

CALCULATION EXAMPLE OF PATENT DIVERSIFICATION INDEX (PDI) (ENTERPRISE A)

CALCULATION 1

ITEMS / ALL TECHNICAL FIELDS IN WHICH ENTERPRISE A FILED PATENT APPLICATIONS (IN 1999)	NUMBER OF CLAIMS PER ENTERPRISE AND PER TECHNICAL FIELD $k(i)$	PER ENTERPRISE AND PER TECHNICAL FIELD SHARE $s(i) = k(i)/K$ (Formula 7)	SEI INDEX PER ENTERPRISE AND PER TECHNICAL FIELD $F.SEI(i) = s(i)^2$ (Formula 8)
H01L	10	0.033	0.001
G06F	26	0.087	0.008
G11B	40	0.133	0.018
H04N	60	0.200	0.040
H01J	164	0.547	0.299
(No other fields)			
TOTAL	$K = \Sigma k(i)$	$S = \Sigma s(i)$	$F.SEI = \Sigma SEI(i)$ (Formula 9)
	300	1.000	0.365
PATENT DIVERSIFICATION RATIO (1 − F.SEI)			0.635
PATENT DIVERSIFICATION INDEX (Formula 10) $PDI = (1 - F.SEI) \times 100$			63.5

$$
\begin{aligned}
PDI &= (1 - F.SEI) \times 100 \\
&= (1 - \Sigma F.SEI(i)) \times 100 \\
&= \{1 - \Sigma s(i)^2\} \times 100 \\
&= \{1 - \Sigma (k(i)/K)^2\} \times 100 \\
&= \{1 - 0.365\} \times 100 \\
&= 63.5
\end{aligned}
$$

$k(i)$: NUMBER OF CLAIMS PER TECHNICAL FIELD

K : TOTAL NUMBER OF CLAIMS OF ALL TECHNICAL FIELDS

$s(i) = k(i)/K$: SHARE PER TECHNICAL FIELD

$SEI(i) = s(i)^2$: SEI INDEX PER TECHNICAL FIELD

$F.SEI$: TOTAL OF SEI INDEXES OF ALL TECHNICAL FIELDS

PDI : PATENT DIVERSIFICATION INDEX

FIG. 7

CALCULATION EXAMPLE OF PATENT DIVERSIFICATION INDEX (PDI) (ENTERPRISE B)

CALCULATION 2

ITEMS / ALL TECHNICAL FIELDS IN WHICH ENTERPRISE A FILED PATENT APPLICATIONS (IN 1999)	NUMBER OF CLAIMS PER ENTERPRISE AND PER TECHNICAL FIELD k(i)	PER ENTERPRISE AND PER TECHNICAL FIELD SHARE $s(i) = k(i)/K$ (Formula 7)	SEI INDEX PER ENTERPRISE AND PER TECHNICAL FIELD $F.SEI(i) = s(i)^2$ (Formula 8)
H01L	70	0.070	0.005
G06F	70	0.070	0.005
G11B	70	0.070	0.005
H04N	70	0.070	0.005
H01J	70	0.070	0.005
H01B	70	0.070	0.005
G06D	70	0.070	0.005
G11H	70	0.070	0.005
H04B	70	0.070	0.005
H01B	70	0.070	0.005
G06B	70	0.070	0.005
G11P	70	0.070	0.005
H04G	80	0.080	0.006
H01C	80	0.080	0.006
(No other fields)			
TOTAL	$K = \Sigma k(i)$	$S = \Sigma s(i)$	$F.SEI = \Sigma SEI(i)$ (Formula 9)
	1,000	1.000	0.072
PATENT DIVERSIFICATION RATIO (1 − F.SEI)			0.928
PATENT DIVERSIFICATION INDEX (Formula 10) $PDI = (1 - F.SEI) \times 100$			92.8

$$
\begin{aligned}
PDI &= (1 - F.SEI) \times 100 \\
&= (1 - \Sigma F.SEI(i)) \times 100 \\
&= \{1 - \Sigma s(i)^2\} \times 100 \\
&= \{1 - \Sigma (k(i)/K)^2\} \times 100 \\
&= \{1 - 0.072\} \times 100 \\
&= 92.8
\end{aligned}
$$

k(i) : NUMBER OF CLAIMS PER TECHNICAL FIELD
K : TOTAL NUMBER OF CLAIMS OF ALL TECHNICAL FIELDS
$s(i) = k(i)/K$: SHARE PER TECHNICAL FIELD
$SEI(i) = s(i)^2$: SEI INDEX PER TECHNICAL FIELD
F.SEI : TOTAL OF SEI INDEXES OF ALL TECHNICAL FIELDS
PDI : PATENT DIVERSIFICATION INDEX

FIG. 8

CATEGORIES OF EVALUATION TYPE IN PATENT DIVERSIFICATION INDEX (PDI)

CATEGORIES OF EVALUATION TYPE	PATENT DIVERSIFICATION INDEX (PDI) VALUE
SUPER GENERALIZED TYPE	96 OR MORE
GENERALIZED TYPE	90 OR MORE, LESS THAN 96
BALANCED TYPE	76 OR MORE, LESS THAN 90
CONCENTRATED TYPE	50 OR MORE, LESS THAN 76
SUPER CONCENTRATED TYPE	LESS THAN 50

FIG. 9

CALCULATION EXAMPLE OF PATENT DIVERSIFICATION INDEX (PDI) (ENTERPRISE A)

EXAMPLES NOT LIMITED TO 2 POWER OF SHARE PER TECHNICAL FIELD IN SEI INDEX PER ENTERPRISE AND PER TECHNICAL FIELD (ENTERPRISE A)

ITEMS / ALL TECHNICAL FIELDS IN WHICH ENTERPRISE A FILED PATENT APPLICATIONS (IN 1999)	NUMBER OF CLAIMS PER ENTERPRISE AND PER TECHNICAL FIELD k(i)	PER ENTERPRISE AND PER TECHNICAL FIELD SHARE s(i) = k(i)/K (Formula 7)	SEI INDEX PER ENTERPRISE AND PER TECHNICAL FIELD (SHARE POWERED BY kb)			
			2 POWER OF SHARE F.SEI(i) = $s(i)^2$	3 POWER OF SHARE F.SEI(i) = $s(i)^3$	1.5 POWER OF SHARE F.SEI(i) = $s(i)^{1.5}$	0.5 POWER OF SHARE F.SEI(i) = $s(i)^{0.5}$
H01L	10	0.033	0.001111	0.000037	0.006086	0.182574
G06F	26	0.087	0.007511	0.000651	0.025514	0.294392
G11B	40	0.133	0.017778	0.002370	0.048686	0.365148
H04N	60	0.200	0.040000	0.008000	0.089443	0.447214
H01J	164	0.547	0.298844	0.163368	0.404188	0.739369
TOTAL	K = Σ k(i)	S = Σ s(i)	F.SEI = Σ SEI(i) = $\Sigma(s(i)^{\alpha})$			
	300	1.000	0.365	0.174	0.574	2.029
PATENT DIVERSIFICATION RATIO (1 − F.SEI)			0.635	0.826	0.426	−1.029
PATENT DIVERSIFICATION INDEX PDI = (1 − F.SEI) × 100			63.5	82.6	42.6	−102.9

FIG. 10

EXAMPLES NOT LIMITED TO 2 POWER OF SHARE PER TECHNICAL FIELD IN SEI INDEX PER ENTERPRISE AND PER TECHNICAL FIELD (ENTERPRISE B)

ITEMS / ALL TECHNICAL FIELDS IN WHICH ENTERPRISE B FILED PATENT APPLICATIONS (IN 1999)	NUMBER OF CLAIMS PER ENTERPRISE AND PER TECHNICAL FIELD k(i)	PER ENTERPRISE AND PER TECHNICAL FIELD SHARE s(i) = k(i)/K (Formula 7)	SEI INDEX PER ENTERPRISE AND PER TECHNICAL FIELD (SHARE POWERED BY kb)			
			2 POWER OF SHARE F.SEI(i) = $s(i)^2$	3 POWER OF SHARE F.SEI(i) = $s(i)^3$	1.5 POWER OF SHARE F.SEI(i) = $s(i)^{1.5}$	0.5 POWER OF SHARE F.SEI(i) = $s(i)^{0.5}$
H01L	70	0.070	0.004900	0.000343	0.018520	0.264575
G06F	70	0.070	0.004900	0.000343	0.018520	0.264575
G11B	70	0.070	0.004900	0.000343	0.018520	0.264575
H04N	70	0.070	0.004900	0.000343	0.018520	0.264575
H01J	70	0.070	0.004900	0.000343	0.018520	0.264575
H01B	70	0.070	0.004900	0.000343	0.018520	0.264575
G06D	70	0.070	0.004900	0.000343	0.018520	0.264575
G11H	70	0.070	0.004900	0.000343	0.018520	0.264575
H04B	70	0.070	0.004900	0.000343	0.018520	0.264575
H01B	70	0.070	0.004900	0.000343	0.018520	0.264575
G06B	70	0.070	0.004900	0.000343	0.018520	0.264575
G11P	70	0.070	0.004900	0.000343	0.018520	0.264575
H04G	80	0.080	0.006400	0.000512	0.022627	0.282843
H01C	80	0.080	0.006400	0.000512	0.022627	0.282843
TOTAL	$K = \Sigma k(i)$	$S = \Sigma s(i)$	$F.SEI = \Sigma SEI(i) = \Sigma (s(i)^{\alpha})$			
	300	1.000	0.072	0.005	0.267	3.741
PATENT DIVERSIFICATION RATIO (1 − F.SEI)			0.928	0.995	0.733	−2.741
PATENT DIVERSIFICATION INDEX PDI = (1 − F.SEI) × 100			92.8	99.5	73.3	−274.1

FIG. 11

CALCULATION EXAMPLE OF PATENT COMPETITIVE POSITION INDEX (PCPI)

CALCULATION 3
NUMBER OF CLAIMS FILED BY EACH ENTERPRISE IN TECHNICAL FIELD 1 (H01L)

ITEMS / ALL ENTERPRISES THAT FILED PATENT APPLICATIONS IN TECHNICAL FIELD 1 (IN 1999)	NUMBER OF CLAIMS PER TECHNICAL FIELD AND PER ENTERPRISE k(j)	PER TECHNICAL FIELD AND PER ENTERPRISE SHARE s(j) = k(j)/K (Formula 11)	SEI INDEX PER TECHNICAL FIELD AND PER ENTERPRISE C.SEI(j) = s(j)^2 (Formula 12)	SEI SCORE PER TECHNICAL FIELD AND PER ENTERPRISE SSEI(j) = s(j) × C.SEI × 100 (Formula 14)
A	10	0.020	0.0004	1.31
B	70	0.140	0.0196	9.16
C	4	0.008	0.0001	0.52
D	3	0.006	0.0000	0.39
E	15	0.030	0.0009	1.96
OTHERS	398	0.796	0.6336	52.11
TOTAL	K = Σ k(j)	S = Σ s(j)	C.SEI = Σ C.SEI(j)	
	500	1.000	0.6546	

SEI SCORE PER ENTERPRISE IN H01L OF ENTERPRISE A = 1.31
B = 9.16
C = ···

$$SSEI(j) = s(j) \times C.SEI \times 100$$
$$= s(j) \times \{\Sigma\, C.SEI(j)\} \times 100$$
$$= s(j) \times \{\Sigma\, s(j)^2\} \times 100$$
$$= (k(j)/K) \times \{\Sigma\, (k(j)/K)^2\} \times 100$$

k(j) : NUMBER OF CLAIMS PER ENTERPRISE
K : TOTAL NUMBER OF CLAIMS OF ALL ENTERPRISES
s(j) = k(j)/K : SHARE PER ENTERPRISE
C.SEI(j) = s(j)^2 : SEI INDEX PER ENTERPRISE
C.SEI : TOTAL OF SEI INDEXES OF ALL ENTERPRISES
SSEI : SEI SCORE PER ENTERPRISE

FIG. 12

CALCULATION 4
NUMBER OF CLAIMS FILED BY EACH ENTERPRISE IN TECHNICAL FIELD 2 (G06F)

ITEMS / ALL ENTERPRISES THAT FILED PATENT APPLICATIONS IN TECHNICAL FIELD 2 (IN 1999)	NUMBER OF CLAIMS PER TECHNICAL FIELD AND PER ENTERPRISE k(j)	PER TECHNICAL FIELD AND PER ENTERPRISE SHARE $s(j) = k(j)/K$ (Formula 11)	SEI INDEX PER TECHNICAL FIELD AND PER ENTERPRISE $C.SEI(j) = s(j)^2$ (Formula 12)	SEI SCORE PER TECHNICAL FIELD AND PER ENTERPRISE $SSEI(j) = s(j) \times C.SEI \times 100$ (Formula 14)
A	26	0.027	0.0007	1.75
B	70	0.072	0.0052	4.72
C	8	0.008	0.0001	0.54
D	5	0.005	0.0000	0.34
E	33	0.034	0.0012	2.23
OTHERS	828	0.854	0.7286	55.88
TOTAL	$K = \Sigma k(j)$	$S = \Sigma s(j)$	$C.SEI = \Sigma C.SEI(j)$	
	970	1.000	0.7358	

SEI SCORE PER ENTERPRISE IN G06F OF ENTERPRISE A = 1.75
B = 4.72
C = ···

$$SSEI(j) = s(j) \times C.SEI \times 100$$
$$= s(j) \times \{\Sigma C.SEI(j)\} \times 100$$
$$= s(j) \times \{\Sigma s(j)^2\} \times 100$$
$$= (k(j)/K) \times \{\Sigma (k(j)/K)^2\} \times 100$$

k(j) : NUMBER OF CLAIMS PER ENTERPRISE
K : TOTAL NUMBER OF CLAIMS OF ALL ENTERPRISES
$s(j) = k(j)/K$: SHARE PER ENTERPRISE
$C.SEI(j) = s(j)^2$: SEI INDEX PER ENTERPRISE
C.SEI : TOTAL OF SEI INDEXES OF ALL ENTERPRISES
SSEI : SEI SCORE PER ENTERPRISE

FIG. 13

CALCULATION EXAMPLE 1 OF PATENT COMPETITIVE POSITION INDEX D (PCPID)
(PROCEDURE 2)

CALCULATION 5
SEI SCORE PER TECHNICAL FIELD AND PER ENTERPRISE (S.SEI) AND
TOTAL OF SEI SCORES PER TECHNICAL FIELD AND PER ENTERPRISE
OF ALL TECHNICAL FIELDS

ENTERPRISES / TECHNICAL FIELDS	ENTERPRISE A	ENTERPRISE B	ENTERPRISE C	ENTERPRISE D	...
H01L	1.31	9.16	0.52	0.39	1.96
G06F	1.75	4.72	0.54	0.34	2.23
G11B	3.57	1.11	...	...	...
H04N	4.12	0.13	...	...	...
H01J	150.10	1.05	...	...	...
OTHERS	–	0.04	...	...	...
TOTAL (T.SEI) PCPID (Formula 15)	T.SEI(A)	T.SEI(B)	T.SEI(C)	T.SEI(D)	
	160.85	16.22	...	...	...

PCPI(X) : PATENT COMPETITIVE POSITION INDEX
T.SEI(X) : TOTAL OF SEI SCORES OF ALL TECHNICAL FIELDS
S.SEI(X) : SEI SCORE OF EACH ENTERPRISE AND EACH TECHNICAL FIELD

$PCPI(X) = T.SEI(X)$
$T.SEI(X) = \Sigma\{S.SEI(X)\}$

FIG. 14

EXAMPLES OF EXCESS GROWTH RATE
FOR CALCULATION OF PATENT COMPETITIVE POSITION INDEX (PCPI)

CALCULATION 6
EXCESS GROWTH RATE OF NUMBER OF CLAIMS

ITEMS \ ENTERPRISES	ENTERPRISE A	ENTERPRISE B	ENTERPRISE C	...
GROWTH RATE $\kappa(X)$ OF NUMBER OF CLAIMS OF EACH ENTERPRISE	5.0%	−1.0%	...	...
AVERAGE GROWTH RATE $\kappa(all)$ OF NUMBER OF CLAIMS OF ALL ENTERPRISES	2.3%	2.3%	...	...
EXCESS GROWTH RATE $\Delta\kappa(X)$ (Formula 16)	$\kappa(A)-\kappa(all)$	$\kappa(B)-\kappa(all)$		
	2.7%	−3.3%	...	...

$\Delta\kappa(X) = \kappa(X)-\kappa(all)$

$\Delta\kappa(X)$: EXCESS GROWTH RATE OF THE ENTERPRISE (X)
$\kappa(X)$: GROWTH RATE OF NUMBER OF CLAIMS OF THE ENTERPRISE (X)
$\kappa(all)$: AVERAGE GROWTH RATE OF NUMBER OF CLAIMS OF ALL ENTERPRISES

FIG. 15

CORRECTION EXAMPLES OF PATENT COMPETITIVE POSITION INDEX (PCPI)
BY EXCESS GROWTH RATE

CALCULATION 7
CORRECTION OF NUMBER OF CLAIMS BY EXCESS GROWTH RATE

ITEMS \ ENTERPRISES	ENTERPRISE A	ENTERPRISE B	ENTERPRISE C	...
PATENT COMPETITIVE POSITION INDEX T.SEI(X) (Formula 15) BEFORE CORRECTION	160.85	16.22	...	...
EXCESS GROWTH RATE $\Delta\kappa(X)$ (Formula 16)	2.7%	−3.3%	...	...
PATENT COMPETITIVE POSITION INDEX PCPI(X) (Formula 17)	T.SEI(A)× $(1+\Delta\kappa(A))$	T.SEI(B)× $(1+\Delta\kappa(B))$		
CORRECTED BY EXCESS GROWTH RATE	165.19	15.68	...	...

$PCPI(X) = T.SEI(X) \times (1+\Delta\kappa(X))$

PCPI(X) : PATENT COMPETITIVE POSITION INDEX (CORRECTED BY EXCESS GROWTH RATE)
T.SEI(X) : PATENT COMPETITIVE POSITION INDEX (BEFORE CORRECTION)
$\Delta\kappa(X)$: EXCESS GROWTH RATE OF THE ENTERPRISE (X)

FIG. 16

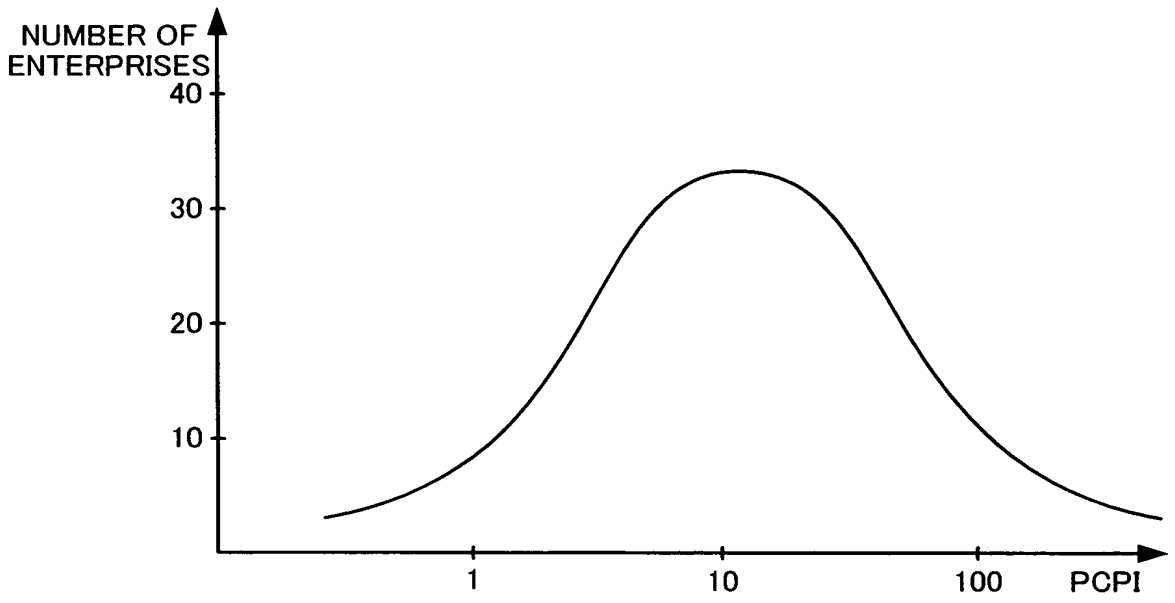


FIG. 17

STAR RANKING CATEGORIES	RANGE	RATIO
★★★★ SUPER STAR	X+2σ OR MORE	TOP 2.28%
★★★☆ STAR PLAYER	X+σ OR MORE, LESS THAN X+2σ	TOP 2.28% TO 16%
★★☆☆ PLAYER	X OR MORE, LESS THAN X+σ	TOP 16% TO 50%
★☆☆☆ BYPLAYER	X−σ OR MORE, LESS THAN X	TOP 50% TO 84%
☆☆☆☆ EXTRA	LESS THAN X−σ	TOP 84% TO BOTTOM (BOTTOM 16%)

FIG. 18

STAR RANKING	TYPE CATEGORY NAME
★★★★	SUPER STAR
★★★☆	STAR PLAYER
★★☆☆	PLAYER
★☆☆☆	BYPLAYER
☆☆☆☆	EXTRA

FIG. 19

PATENT DIVERSIFICATION INDEX AND
PATENT COMPETITIVE POSITION INDEX,
STANDARDIZED PATENT COMPETITIVE POSITION INDEX
(EXAMPLE OF ENTERPRISE A)

[PDI] PATENT DIVERSIFICATION INDEX 63.5
CONCENTRATED TYPE

[PCPI] PATENT COMPETITIVE POSITION INDEX 165.20
★★★★
STAR PLAYER

[avgPCPI] STANDARDIZED PATENT COMPETITIVE POSITION INDEX 33.04
★★★
SUPER STAR

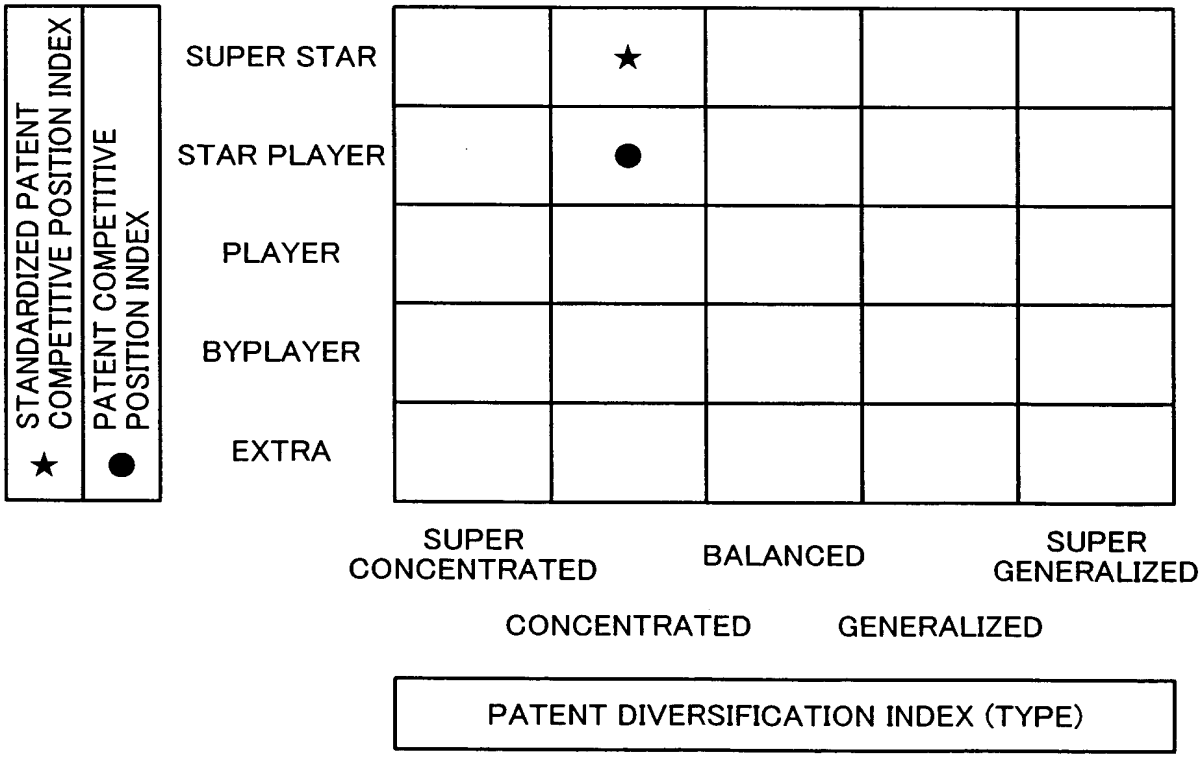


FIG. 20

PATENT DIVERSIFICATION INDEX AND
PATENT COMPETITIVE POSITION INDEX,
STANDARDIZED PATENT COMPETITIVE POSITION INDEX
(EXAMPLE OF ENTERPRISE B)

[PDI] PATENT DIVERSIFICATION INDEX 92.8
GENERALIZED TYPE

[PCPI] PATENT COMPETITIVE POSITION INDEX 15.68
★★★★
PLAYER

[avgPCPI] STANDARDIZED PATENT COMPETITIVE POSITION INDEX 1.12
★★★
BYPLAYER

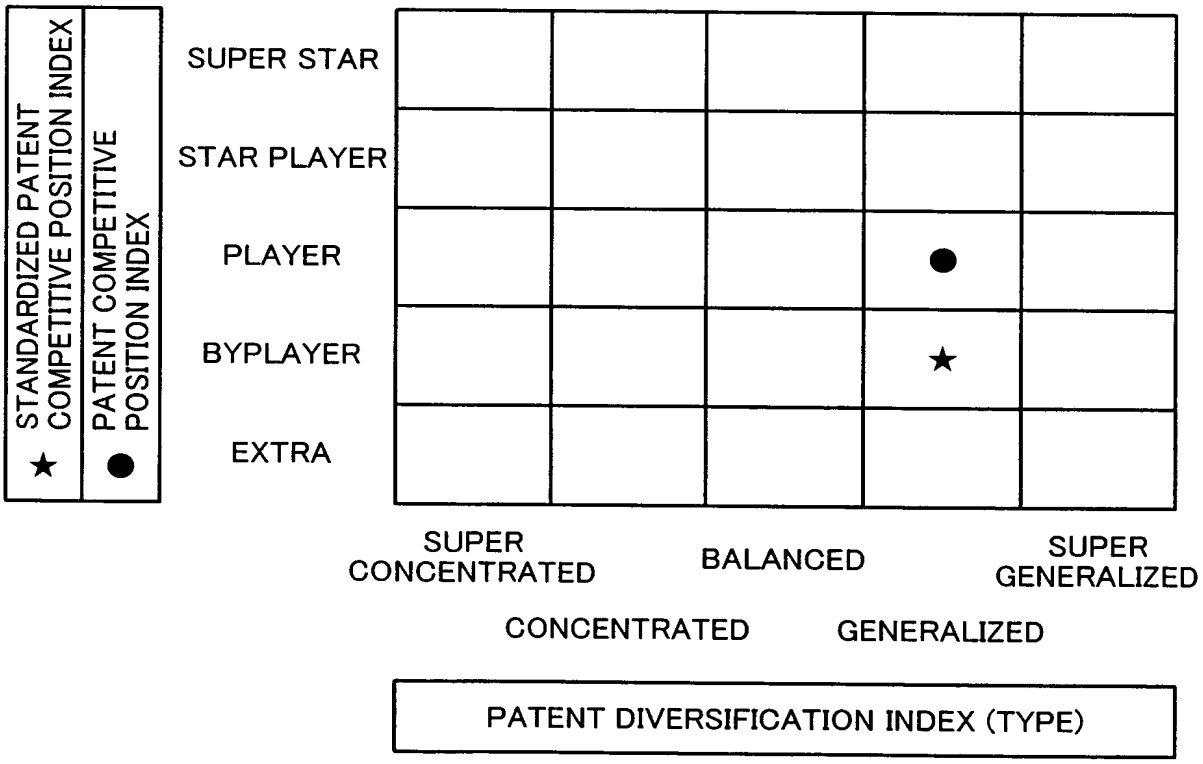


FIG. 21

PATENT COMPETITIVE POSITION INDEX (PCPI)
RANKING (MACHINERY AND SHIPBUILDING)

ORDER IN PATENT COMPETITIVE POSITION INDEX	ORDER IN STANDARD-IZED PATENT COMPETITIVE POSITION INDEX	NAME OF ENTERPRISE	PATENT COMPETITIVE POSITION INDEX	STANDARD-IZED PATENT COMPETITIVE POSITION INDEX	PATENT DIVERSIFI-CATION INDEX TYPE
1	9	MI	1477.62	5.24	SUPER GEN-ERALIZED
2	1	TS	365.06	45.63	CON-CENTRATED
3	45	IS	225.89	1.22	SUPER GEN-ERALIZED
4	42	KW	225.32	1.37	SUPER GEN-ERALIZED
5	6	TK	216.99	7.00	GEN-ERALIZED
6	16	HK	206.44	2.99	BALANCED
7	3	TL	204.26	11.35	BALANCED
8	15	MU	197.84	3.09	BALANCED
9	12	MA	175.60	4.88	GEN-ERALIZED
10	5	JU	175.33	8.77	CON-CENTRATED
11	21	MZ	159.65	2.62	GEN-ERALIZED
12	36	HZ	140.98	1.60	SUPER GEN-ERALIZED
13	35	DK	139.15	1.66	BALANCED
14	17	BR	135.51	2.95	BALANCED
15	11	OR	133.88	4.96	BALANCED
16	51	SJ	130.64	1.08	SUPER GEN-ERALIZED
17	24	BH	127.89	2.17	GEN-ERALIZED
18	61	KB	126.96	0.84	SUPER GEN-ERALIZED
19	13	MK	106.40	4.63	GEN-ERALIZED
20	34	NS	84.51	1.66	BALANCED

FIG. 22

STANDARDIZED PATENT COMPETITIVE POSITION INDEX (avgPCPI) RANKING (MACHINERY AND SHIPBUILDING)

ORDER IN STANDARD-IZED PATENT COMPETITIVE POSITION INDEX	ORDER IN PATENT COMPETITIVE POSITION INDEX	NAME OF ENTERPRISE	STANDARD-IZED PATENT COMPETITIVE POSITION INDEX	PATENT COMPETITIVE POSITION INDEX	PATENT DIVERSIFI-CATION INDEX TYPE
1	2	TS	45.63	365.06	CON-CENTRATED
2	22	RE	27.54	82.63	SUPER CON-CENTRATED
3	7	TL	11.35	204.26	BALANCED
4	65	SA	9.63	9.63	SUPER CON-CENTRATED
5	10	JU	8.77	175.33	CON-CENTRATED
6	5	TK	7.00	216.99	GEN-ERALIZED
7	34	TY	5.95	35.69	CON-CENTRATED
8	25	SE	5.65	67.80	BALANCED
9	1	MI	5.24	1477.62	SUPER GEN-ERALIZED
10	23	HH	5.14	71.93	BALANCED
11	15	OR	4.96	133.88	BALANCED
12	9	MA	4.88	175.60	GEN-ERALIZED
13	19	MK	4.63	106.40	GEN-ERALIZED
14	96	KK	3.45	3.45	SUPER CON-CENTRATED
15	8	MU	3.09	197.84	BALANCED
16	6	HK	2.99	206.44	BALANCED
17	14	BR	2.95	135.51	BALANCED
18	51	IS	2.91	14.54	CON-CENTRATED
19	53	TJ	2.87	14.35	CON-CENTRATED
20	27	RK	2.82	59.19	BALANCED

FIG. 23

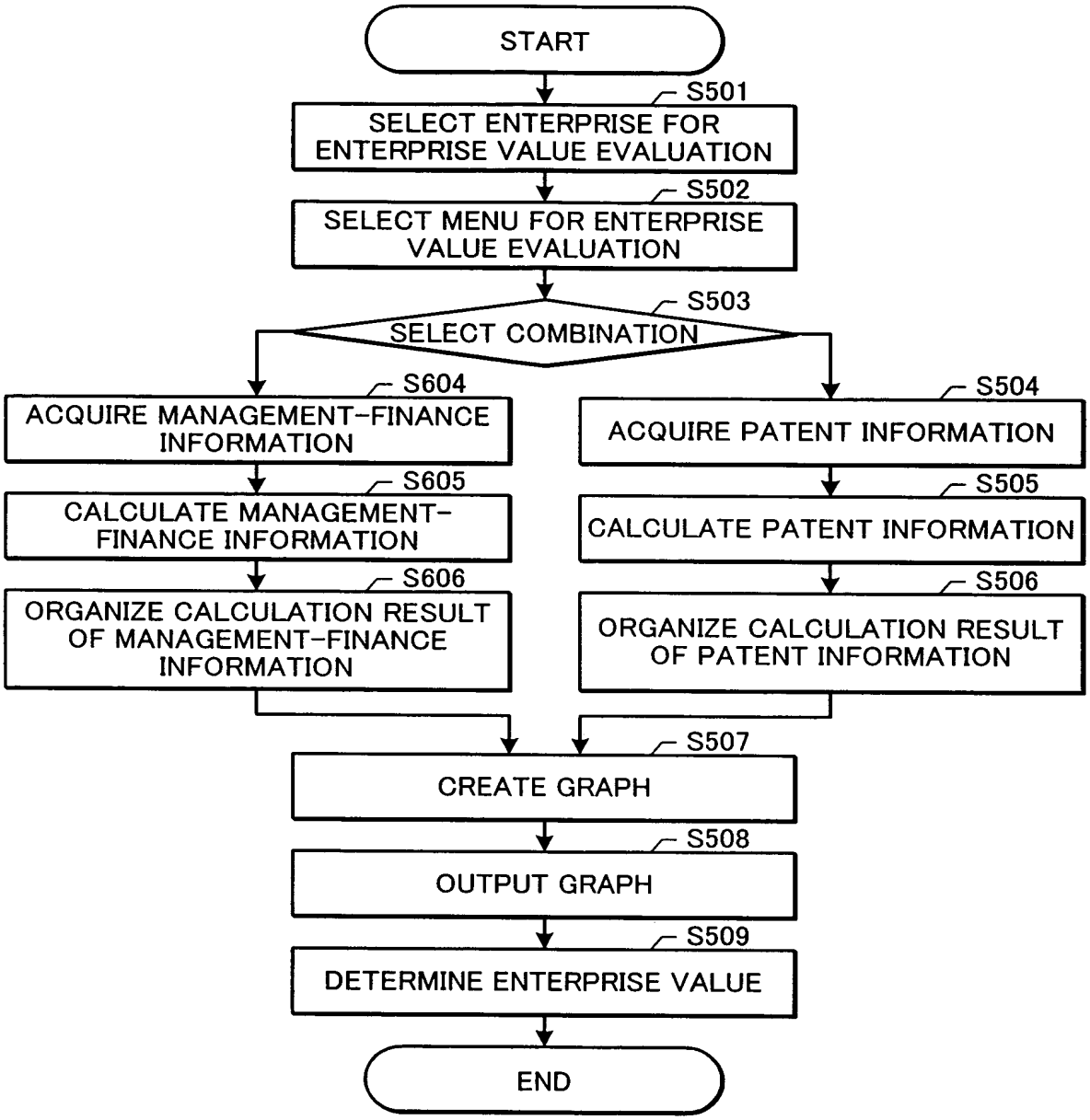

START
S501
SELECT ENTERPRISE FOR ENTERPRISE VALUE EVALUATION
S502
SELECT MENU FOR ENTERPRISE VALUE EVALUATION
S503
SELECT COMBINATION
S604
ACQUIRE MANAGEMENT-FINANCE INFORMATION
S605
CALCULATE MANAGEMENT-FINANCE INFORMATION
S606
ORGANIZE CALCULATION RESULT OF MANAGEMENT-FINANCE INFORMATION
S504
ACQUIRE PATENT INFORMATION
S505
CALCULATE PATENT INFORMATION
S506
ORGANIZE CALCULATION RESULT OF PATENT INFORMATION
S507
CREATE GRAPH
S508
OUTPUT GRAPH
S509
DETERMINE ENTERPRISE VALUE
END

FIG. 24

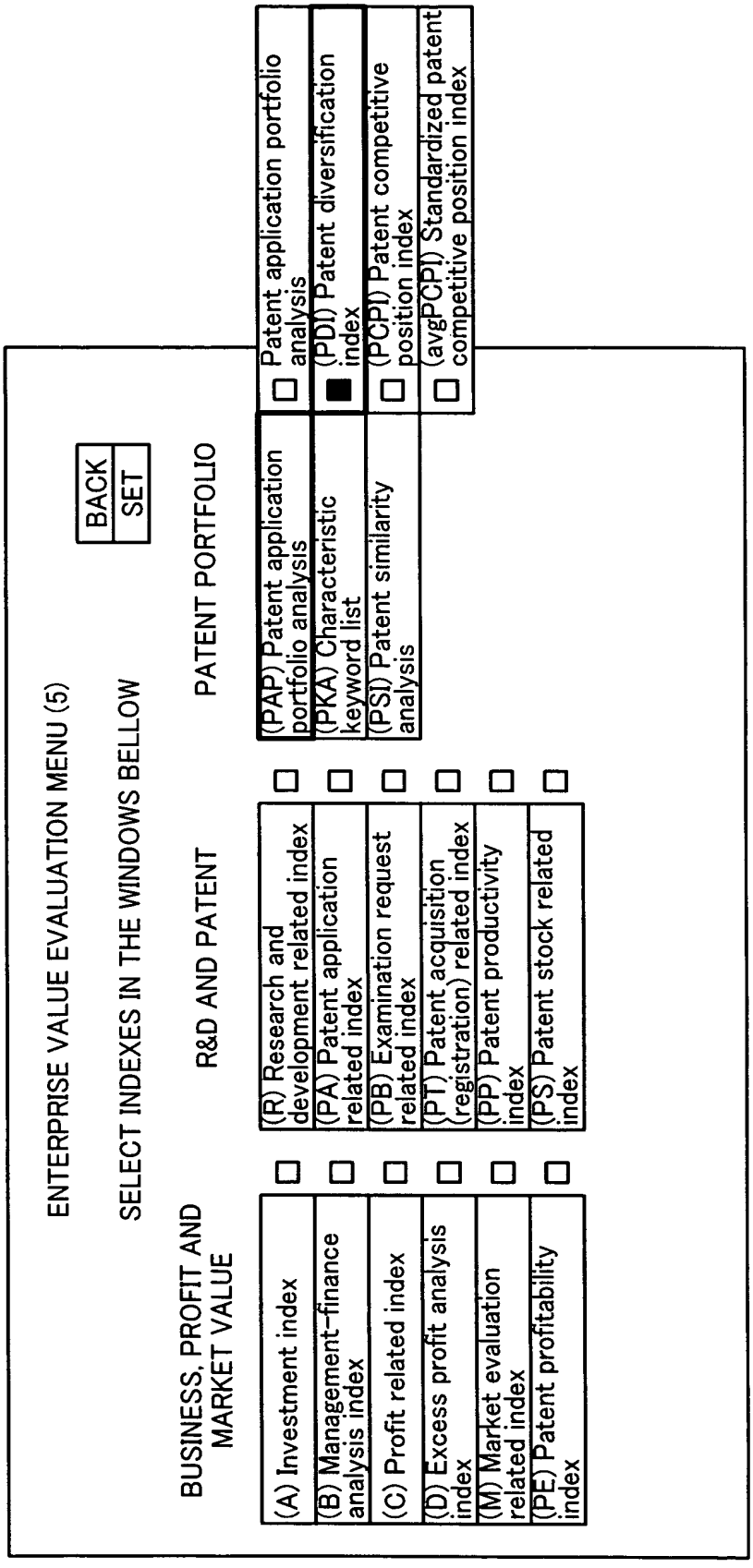

ENTERPRISE VALUE EVALUATION MENU (5)
SELECT INDEXES IN THE WINDOWS BELLOW
BACK
SET
BUSINESS, PROFIT AND MARKET VALUE
(A) Investment index
(B) Management-finance analysis index
(C) Profit related index
(D) Excess profit analysis index
(M) Market evaluation related index
(PE) Patent profitability index
R&D AND PATENT
(R) Research and development related index
(PA) Patent application related index
(PB) Examination request related index
(PT) Patent acquisition (registration) related index
(PP) Patent productivity index
(PS) Patent stock related index
PATENT PORTFOLIO
(PAP) Patent application portfolio analysis
(PKA) Characteristic keyword list
(PSI) Patent similarity analysis
Patent application portfolio analysis
(PDI) Patent diversification index
(PCPI) Patent competitive position index
(avgPCPI) Standardized patent competitive position index

FIG. 25

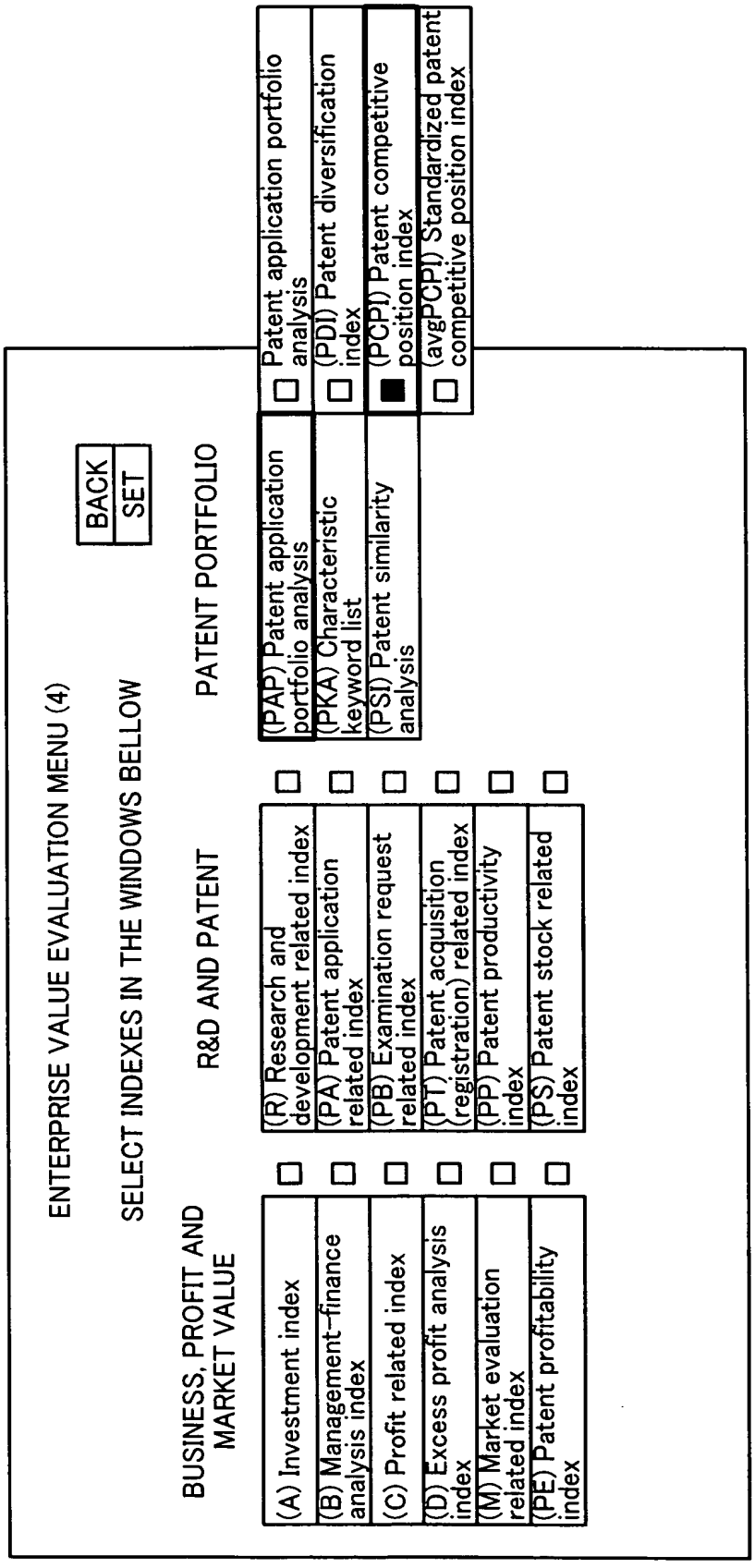

ENTERPRISE VALUE EVALUATION MENU (4)
SELECT INDEXES IN THE WINDOWS BELLOW
BACK
SET
BUSINESS, PROFIT AND MARKET VALUE
(A) Investment index
(B) Management-finance analysis index
(C) Profit related index
(D) Excess profit analysis index
(M) Market evaluation related index
(PE) Patent profitability index
R&D AND PATENT
(R) Research and development related index
(PA) Patent application related index
(PB) Examination request related index
(PT) Patent acquisition (registration) related index
(PP) Patent productivity index
(PS) Patent stock related index
PATENT PORTFOLIO
(PAP) Patent application portfolio analysis
(PKA) Characteristic keyword list
(PSI) Patent similarity analysis
Patent application portfolio analysis
(PDI) Patent diversification index
(PCPI) Patent competitive position index
(avgPCPI) Standardized patent competitive position index

FIG. 26

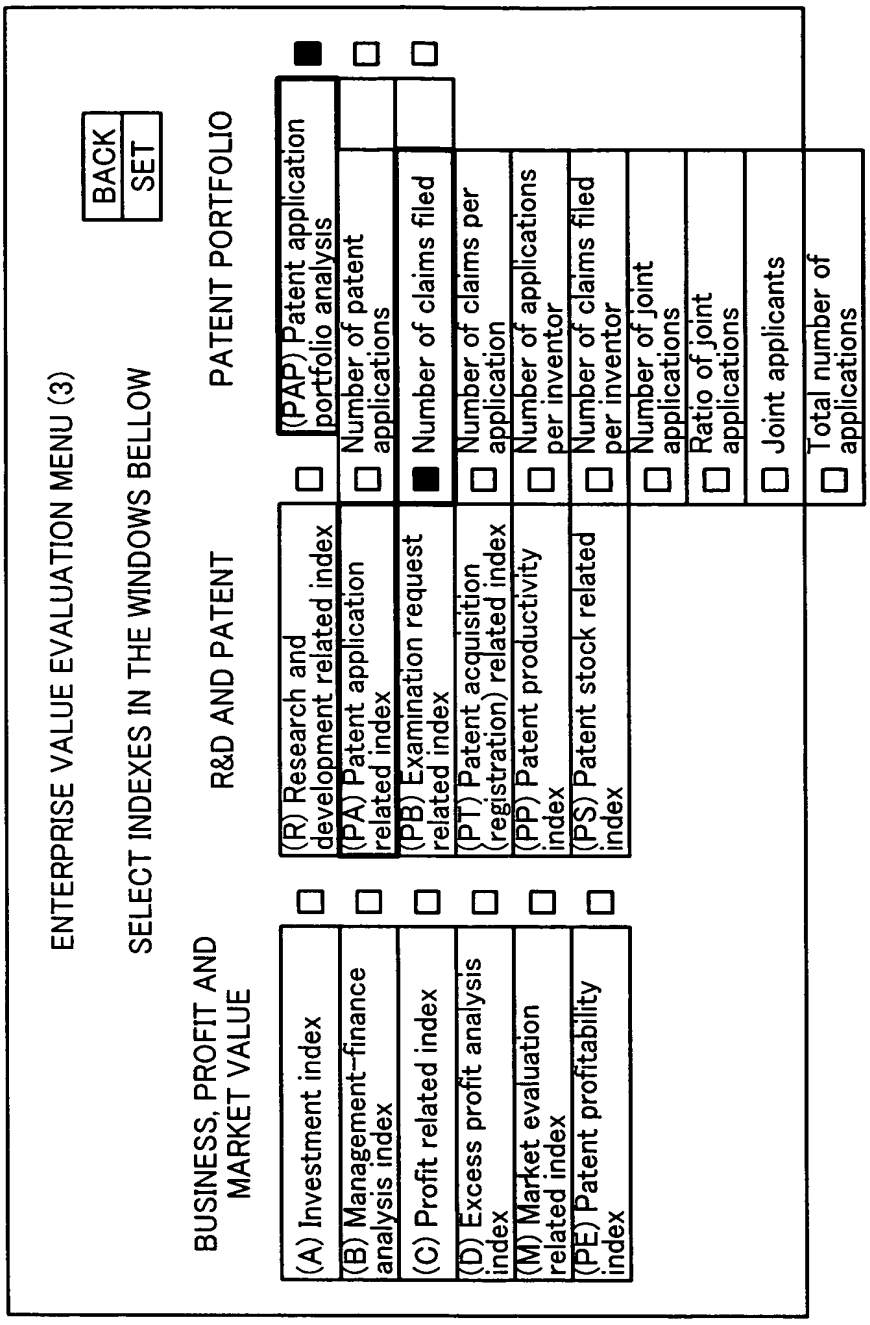

ENTERPRISE VALUE EVALUATION MENU (3)
SELECT INDEXES IN THE WINDOWS BELLOW
BACK
SET
BUSINESS, PROFIT AND MARKET VALUE
R&D AND PATENT
PATENT PORTFOLIO
(A) Investment index
(B) Management-finance analysis index
(C) Profit related index
(D) Excess profit analysis index
(M) Market evaluation related index
(PE) Patent profitability index
(R) Research and development related index
(PA) Patent application related index
(PB) Examination request related index
(PT) Patent acquisition (registration) related index
(PP) Patent productivity index
(PS) Patent stock related index
(PAP) Patent application portfolio analysis
Number of patent applications
Number of claims filed
Number of claims per application
Number of applications per inventor
Number of claims filed per inventor
Number of joint applications
Ratio of joint applications
Joint applicants
Total number of applications

FIG. 27

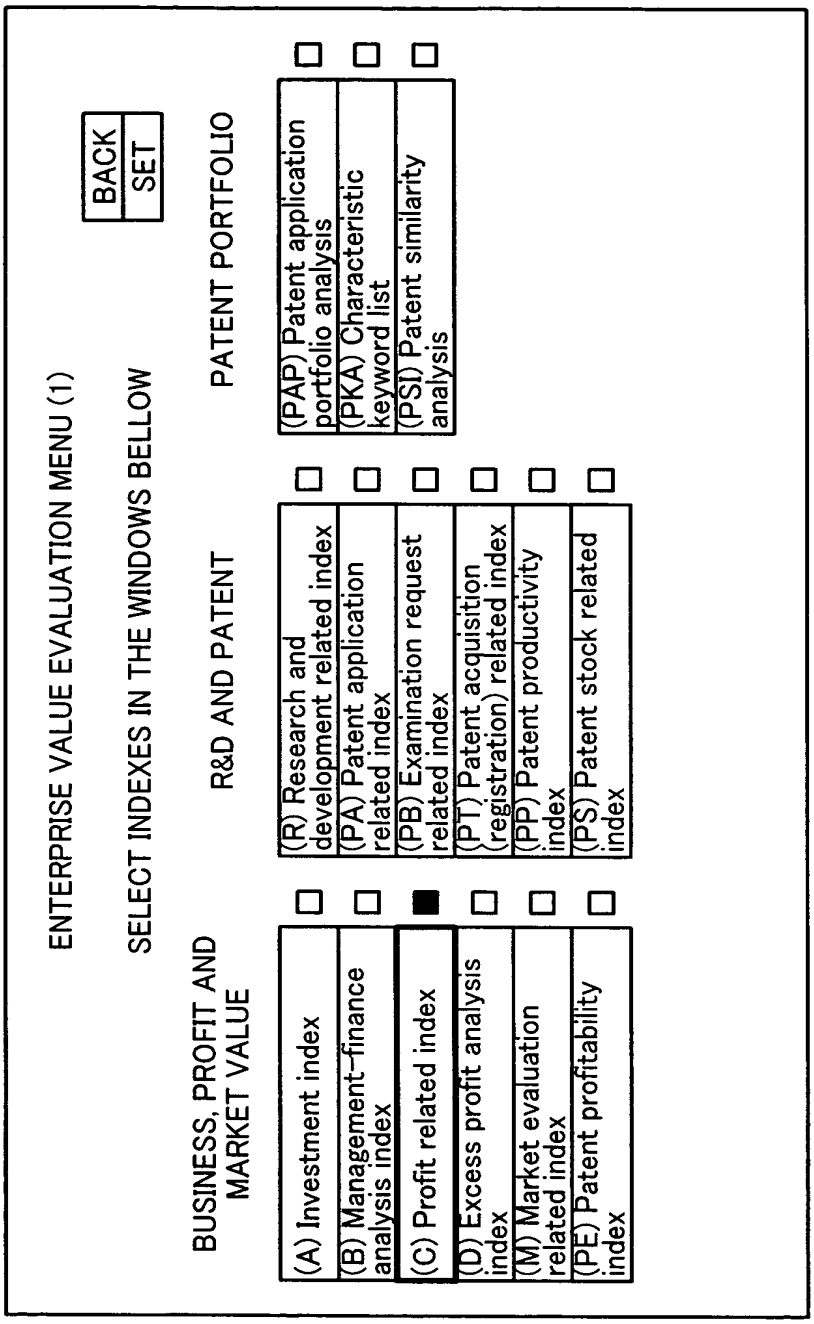

ENTERPRISE VALUE EVALUATION MENU (1)
SELECT INDEXES IN THE WINDOWS BELLOW
BACK
SET
BUSINESS, PROFIT AND MARKET VALUE
(A) Investment index
(B) Management-finance analysis index
(C) Profit related index
(D) Excess profit analysis index
(M) Market evaluation related index
(PE) Patent profitability index
R&D AND PATENT
(R) Research and development related index
(PA) Patent application related index
(PB) Examination request related index
(PT) Patent acquisition (registration) related index
(PP) Patent productivity index
(PS) Patent stock related index
PATENT PORTFOLIO
(PAP) Patent application portfolio analysis
(PKA) Characteristic keyword list
(PSI) Patent similarity analysis

FIG. 28

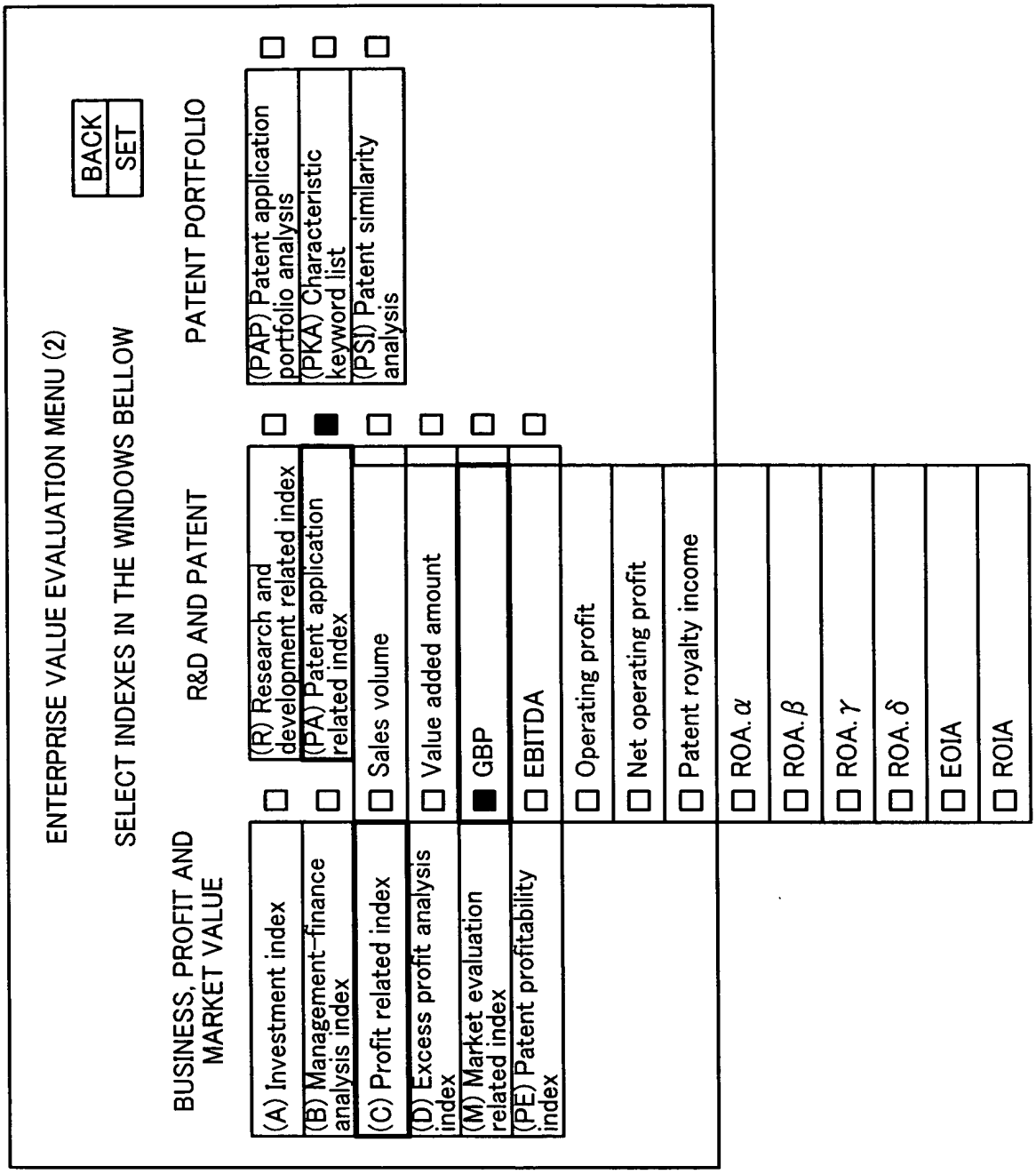

ENTERPRISE VALUE EVALUATION MENU (2)
SELECT INDEXES IN THE WINDOWS BELLOW
BACK
SET
BUSINESS, PROFIT AND MARKET VALUE
R&D AND PATENT
PATENT PORTFOLIO
(A) Investment index
(B) Management-finance analysis index
(C) Profit related index
(D) Excess profit analysis index
(M) Market evaluation related index
(PE) Patent profitability index
(R) Research and development related index
(PA) Patent application related index
Sales volume
Value added amount
GBP
EBITDA
Operating profit
Net operating profit
Patent royalty income
ROA. α
ROA. β
ROA. γ
ROA. δ
EOIA
ROIA
(PAP) Patent application portfolio analysis
(PKA) Characteristic keyword list
(PSI) Patent similarity analysis

FIG. 29

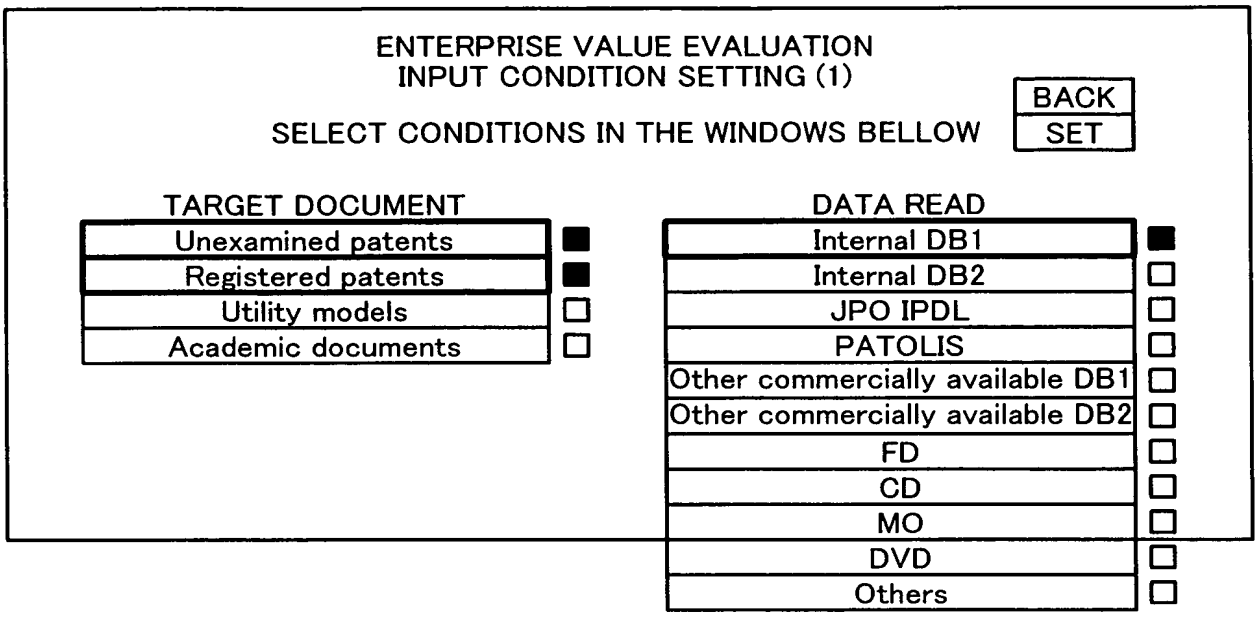

ENTERPRISE VALUE EVALUATION
INPUT CONDITION SETTING (1)
SELECT CONDITIONS IN THE WINDOWS BELLOW
BACK
SET
TARGET DOCUMENT
Unexamined patents
Registered patents
Utility models
Academic documents
DATA READ
Internal DB1
Internal DB2
JPO IPDL
PATOLIS
Other commercially available DB1
Other commercially available DB2
FD
CD
MO
DVD
Others

FIG. 30

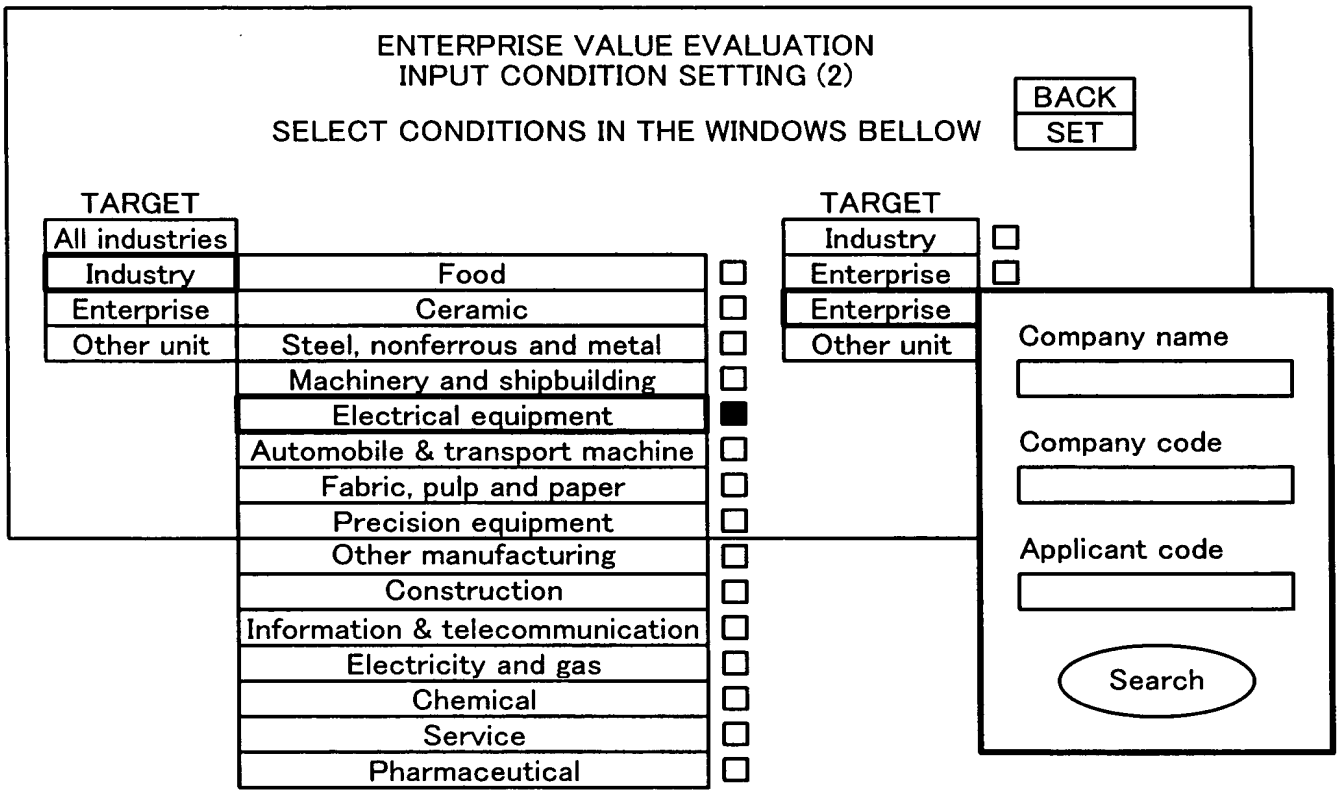

ENTERPRISE VALUE EVALUATION
INPUT CONDITION SETTING (2)
SELECT CONDITIONS IN THE WINDOWS BELLOW
BACK
SET
TARGET
All industries
Industry
Enterprise
Other unit
Food
Ceramic
Steel, nonferrous and metal
Machinery and shipbuilding
Electrical equipment
Automobile & transport machine
Fabric, pulp and paper
Precision equipment
Other manufacturing
Construction
Information & telecommunication
Electricity and gas
Chemical
Service
Pharmaceutical
TARGET
Industry
Enterprise
Enterprise
Other unit
Company name
Company code
Applicant code
Search

FIG. 31

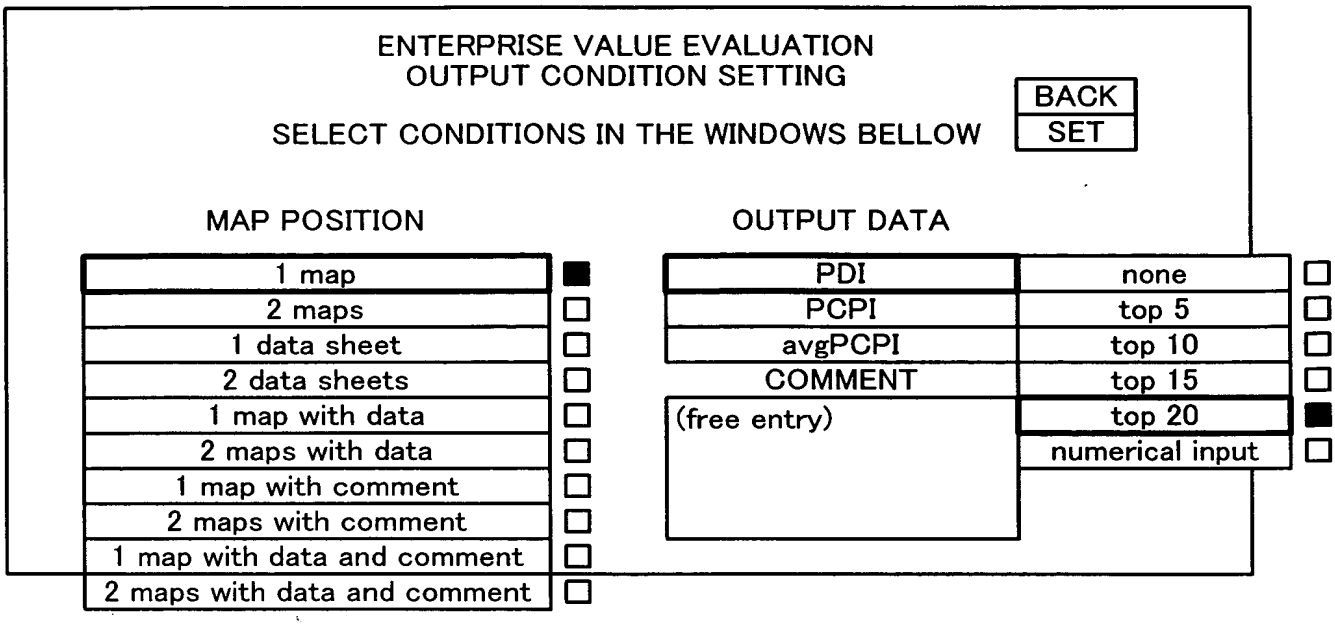

ENTERPRISE VALUE EVALUATION
OUTPUT CONDITION SETTING
SELECT CONDITIONS IN THE WINDOWS BELLOW
BACK
SET
MAP POSITION
1 map
2 maps
1 data sheet
2 data sheets
1 map with data
2 maps with data
1 map with comment
2 maps with comment
1 map with data and comment
2 maps with data and comment
OUTPUT DATA
PDI
PCPI
avgPCPI
COMMENT
(free entry)
none
top 5
top 10
top 15
top 20
numerical input

FIG. 32

"PATENT QUARTERLY JOURNAL" INDEX LIST OF ENTERPRISE VALUE EVALUATION SYSTEM

A: Business, Profit and Market Value Related Index (1)

Index Group	Index	Formula
(A) Investment	Facility Investment Amount	{(Current Term Tangible Fixed Assets - Previous Term Tangible Fixed Assets)} + (Current Term Depreciation Cost)
	R&D Cost	Total Amount of R&D Cost
	Investment Trend Index	Term-on-Term Ratio of {(Facility Investment Amount) + (R&D Cost)}
(B) Management/Finance Analysis	Facility Investment Efficiency	(Value Added Amount)/(Tangible Fixed Assets)
	Labor Productivity	(Value Added Amount)/(Number of Employees)
	Labor Equipment Ratio	(Tangible Fixed Assets)/(Number of Employees)
	Labor Distribution Share	{(Personnel Expense to be Included in Selling Cost and Administrative Expenses) + (Labor Cost to be Included in Manufacturing Cost)}/(Value Added Amount)
	Total Factor Productivity	(Value Added Amount Rate of Change) - {(1 - Labor Distribution Share (To Value Added)) × (Depreciation Target Tangible Fixed Assets Rate of Change)} - {(Labor Distribution Share (To Value Added)) × (Number of Employees Rate of Change)}
	Cost-to-Sales Ratio	(Cost of Sales)/(Sales Volume)
	Cost of Sales-and-Administration Ratio to Sales	(Selling Cost and Administrative Expenses)/(Sales Volume)
	Interest Bearing Debt Ratio	(Interest Bearing Debt)/(Total Assets)
	Equity to Asset Ratio	(Equity Capital)/(Total Assets)
(C) Profit Related Items	Sales Volume	(Sales Volume)
	Value Added Amount	(Operating Net Profit) + (Interest Paid and Discount) + (R&D Cost) + (Depreciation Cost) + (Personnel Expense (including board members' remuneration)) + (Welfare Expense) + (Tax and Dues) (Operating Net Profit) = (Operating Profit) - (Interest Paid and Discount)
	Gross Operating Profit (GBP)	(Operating Profit) + (R&D Cost)
	Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA)	(Operating Profit) + (Depreciation Cost)
	Operating Profit	(Operating Profit)
	Operating Net Profit	(Operating Profit) - (Interest Paid and Discount)
	Patent Royalty Income	(Patent Royalty Income (Including Royalty Income of Trademarks and Brands, etc.))
	ROA α	{(Value Added Amount) + (Patent Royalty Income)}/(Total Assets)
	ROA β	{(GBP) + (Patent Royalty Income)}/(Total Assets)
	ROA γ	{(EBITDA) + (Patent Royalty Income)}/(Total Assets)
	ROA δ	{(Operating Profit) + (Patent Royalty Income)}/(Total Assets)
	Earnings on Intellectual Assets (EOIA)	{(GBP) + (Patent Royalty Income)} - {(Financial Assets) × (Profit Ratio m)} + {(Tangible Fixed Assets) × (Profit Ratio f)} (Profit Ratio m): Application of Short Term Prime Rate; (Profit Ratio f): Application of Long Term Prime Rate
	Return On Intellectual Assets (ROIA)	(Earnings on Intellectual Assets)/(Total Assets)

FIG. 33

"PATENT QUARTERLY JOURNAL" INDEX LIST OF ENTERPRISE VALUE EVALUATION SYSTEM

A: Business, Profit and Market Value Related Index (2)

Index Group	Index	Formula
(D) Excess Profit Analysis	Excess Value Added Amount	Sales Volume × {(Sales Volume Value Added Ratio) - (Industry Average Sales Volume Value Added Ratio)}
	Excess GBP	Sales Volume × {(Sales Volume GBP Ratio) - (Industry Average Sales Volume GBP Ratio)}
	Excess EBITDA	Sales Volume × {(Sales Volume EBITDA Ratio) - (Industry Average Sales Volume EBITDA Ratio)}
	Excess Operating Profit	Sales Volume × {(Operating Profit Ratio (To Sales)) - (Industry Average Operating Profit Ratio (To Sales))}
	Excess ROA α	(ROA α) - (Industry Average ROA α)
	Excess ROA β	(ROA β) - (Industry Average ROA β)
	Excess ROA γ	(ROA γ) - (Industry Average ROA γ)
	Excess ROA δ	(ROA δ) - (Industry Average ROA δ)
	Excess Earnings on Intellectual Assets (EXEOIA)	(Net Assets) × {(Ratio of Earnings on Intellectual Assets) - (Industry Average of Ratio of Earnings on Intellectual Assets)
(M) Market Evaluation Related Items	MVA	(Value of Stock) - (Shareholders' Equity) (Value of Stock) = (Total Number of Outstanding Stock) × (Stock Price)
	PBR	(Value of Stock)/(Equity Capital)
	Expected Intellectual Property Profit	{(Fixed Liabilities) × (Profit Ratio a) + (Value of Stock) × (Profit Ratio p)} - {(Financial Assets) × (Profit Ratio m) + (Tangible Fixed Assets) × (Profit Ratio f)}) (Profit Ratio a): (Weighted Average of Long Term Prime Rate and Bond Rate) × (1 - Corporate Tax) (Profit Ratio p): Calculated Based on Capital Asset Pricing Model (CAPM). Yield on Long Term 10-Year Government Bonds, Stock Investment Profit Ratio, β Value were used; (Profit Ratio m): Application of Short Term Prime Rate (Profit Ratio f): Application of Long Term Prime Rate
(PE) Patent Profitability Related Items	Patent Profitability α	{(GBP) + (Patent Royalty Income)}/(Total Number of Effective Patents)
	Patent Profitability β	{(Excess Value Added) + (Patent Royalty Income)}/(Total Number of Effective Patents)
	Patent Profitability γ	{(Excess GBP) + (Patent Royalty Income)}/(Total Number of Effective Patents)
	Patent Profitability δ	(Excess Earnings on Intellectual Assets (EXEOIA))/(Total Number of Effective Patents)

FIG. 34

"PATENT QUARTERLY JOURNAL" INDEX LIST OF ENTERPRISE VALUE EVALUATION SYSTEM

B: R&D and Patent Related Index (1)

Index Group	Index	Formula
(R) R&D Related Items	R&D Cost Ratio α	(R&D Cost)/(Sales Volume)
	R&D Cost Ratio β	(R&D Cost)/(Value Added Amount)
	R&D Cost Ratio γ	(R&D Cost)/(GBP)
	R&D Cost Ratio δ	(R&D Cost)/(Total Assets)
	Number of Inventors	(Calculated Based on "Inventor" Column of Laid-Open Publications)
	Ratio of Inventors	(Number of Inventors)/(Number of Employees)
	R&D Cost per Inventor	(R&D Cost)/(Number of Inventors)
(PA) Patent Application Related Items	Number of Patent Applications	(Joint Application is Recorded as One Application)
	Number of Claims Filed	(Sum of Number of Claims of Laid-Open Publications)
	Number of Claims per Patent Application	(Number of Claims Filed)/(Number of Patent Applications)
	Number of application per Inventor	(Number of Patent Applications (Other Than Joint Applications))/(Number of Inventors)
	Number of Claims per Inventor (Patent Application)	(Number of Claims Filed (Other Than Joint Applications))/(Number of Inventors)
	Number of Joint Applications	(Number of Joint Applications Among Patent Applications Filed)
	Joint Filing Ratio	(Number of Joint Applications)/(Number of Patent Applications)
	Number of Applicants in Joint	(Number of Joint Applicants in Joint Applications)
	Patent Application Stock	(Cumulative Number of Patent Applications)
(PB) Examination Request Related Items	Number of Examination Requests	(Number of Examination Requests Filed)
	Years to Examination Request (Average)	$[\Sigma$ (Date of Examination Request - Filing Date)$]/[$(Number of Examination Requests)×(Annual Number of Days)$]$
	Examination Request Ratio	(Examination Request Ratio Pertaining to Number of Patent Applications of Each Year)
	Cumulative Number of Examination Requests	(Cumulative Number of Examination Requests)

FIG. 35

"PATENT QUARTERLY JOURNAL" INDEX LIST OF ENTERPRISE VALUE EVALUATION SYSTEM

B: R&D and Patent Related Index (2)

Index Group	Index	Formula
(PT) Patent Acquisition (Registration) Related Items	Number of Patents Granted	(Number of Patents Granted)
	Number of Claims Registered	(Number of "Claims" in Registered Gazette)
	Years to Patent Granted (Average)	[Σ (Patent Registration Date - Patent Filing Date)]/[(Number of Patents Granted)×(Annual Number of Days)]
	Patent Granted Ratio to Number of Applications	(Number of Patents Granted Each Year)/(Number of Patent Applications Filed Each Year)
	Patent Granted Stock	(Patent Granted Stock at End of Each Year)
	Patent Granted Ratio to Number of Examination Requests	(Number of Patents Granted Each Year)/(Number of Examination Requests Filed Each Year)
	Patent Granted Stock Ratio to Examination Request Stock	(Patent Granted Stock)/(Cumulative Number of Examination Requests)
	Number of Effective Patents Granted	(Number of Patents Granted Each Year) - (Number of Patents Invalidated Among Patent Registrations Each Year)
(PP) Patent Productivity	Patent Application Productivity	(Number of Claims of Patent Applications in a year)/(R&D Cost in a previous year)
	Examination Request Productivity	Correction of (Patent Application Productivity). (Patent Application Productivity) × (Estimated Examination Request Ratio) (Estimated Examination Request Ratio: Sought Based on Number of Examination Requests for Previous Applications in which the term for Examination Request is expired.)
	Patent Granted Productivity	Correction of (Patent Application Productivity). (Patent Application Productivity) × (Estimated Registration Ratio) (Estimated Registration Ratio: Sought Based on Number of Registrations of Previous Applications, Lapsed Years, Average Required Years to Patent Granted)
(PS) Patent Stock Related Items	Total Number of Effective Patents	(Patent Granted Stock) - (Patent Invalidation Stock)
	Patent Granted Renewal Ratio	(Total Number of Effective Patents)/(Patent Granted Stock)
	Years to Renewal Patent Granted Expiration (Average)	[Σ (Scheduled Invalidation Date of Each Patent of the Total Number of Effective Patents - Year End)] /[(Total Number of Effective Patents) × (Annual Number of Days)]
	Patent Stock Index	(Total Number of Effective Patents) × (Years to Renewal Patent Granted Expiration (Average))
	Total Patent Assets	[(R&D Cost)/(Number of Patents Granted)]×(Total Number of Effective Patents)

FIG. 36

"PATENT QUARTERLY JOURNAL" INDEX LIST OF ENTERPRISE VALUE EVALUATION SYSTEM

C: Patent Portfolio Related Index

Index Group	Index	Formula
(PAP) Patent Application Portfolio analysis	Patent Application Portfolio analysis	(Power of Number of Claims Share Per Technical Field) (Share: Share of Each Technical Field in an Enterprise or Share of each Enterprise in All Enterprises in a Technical Field)
	Patent Diversification Index (PDI)	$[1 - \Sigma(\text{Share of Each Technical Field in an Enterprise})^2]$
	Patent Competitive Position Index (PCPI)	$\Sigma[[\Sigma (\text{SEI Index Per Technical Field})] \times (\text{Share of Each Company Per Technical Field})] \times (1 + \text{Excess Growth Rate})$
	Average Patent Competitive Position Index (Average PCPI)	(Patent Competitive Position Index (PCPI))/(Number of Technical Fields covered by Company's Patent Applications (Average in 3 Years))
(PKA) Characteristic Keywords	Characteristic Keywords	(Selected Keywords Having an Appearance Frequency That is Not Large in All Patent Publications and That is Large in Patent Publications of the Same Company)
	Number of Characteristic Keywords	(Representation of Character of an Enterprise by the Number of Keywords under a Constant Condition of Selecting the Characteristic Keywords)
(PSI) Patent Similarity Analysis	Patent Similarity Index	(Ratio of Patent Publications Having the Keyword of the Subject Patent Publication within a Population)
	Patent Similarity Index to the Same Company (PSIself)	(Patent Similarity Index (PSI) When the Population is the Same Company's Patent Publications)
	Patent Similarity Index to All Companies (PSIall)	(Patent Similarity Index (PSI) When the Population is All Patent Publications Including the Other Companies' Patent Publications)
	Normal Patent Publication	(Patent Publications Having Significantly Large PSIall)
	Exceptional Patent Publication	(Patent Publications Having Significantly Small PSIall)

FIG. 37

RELATIONSHIP BETWEEN
PATENT COMPETITIVE POSITION INDEX (PCPI) AND
GROSS OPERATING PROFIT (GBP)

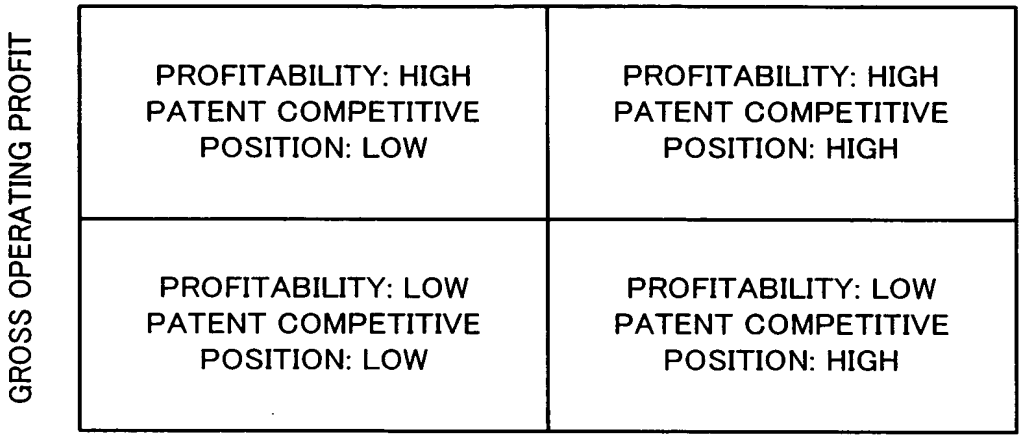


FIG. 38

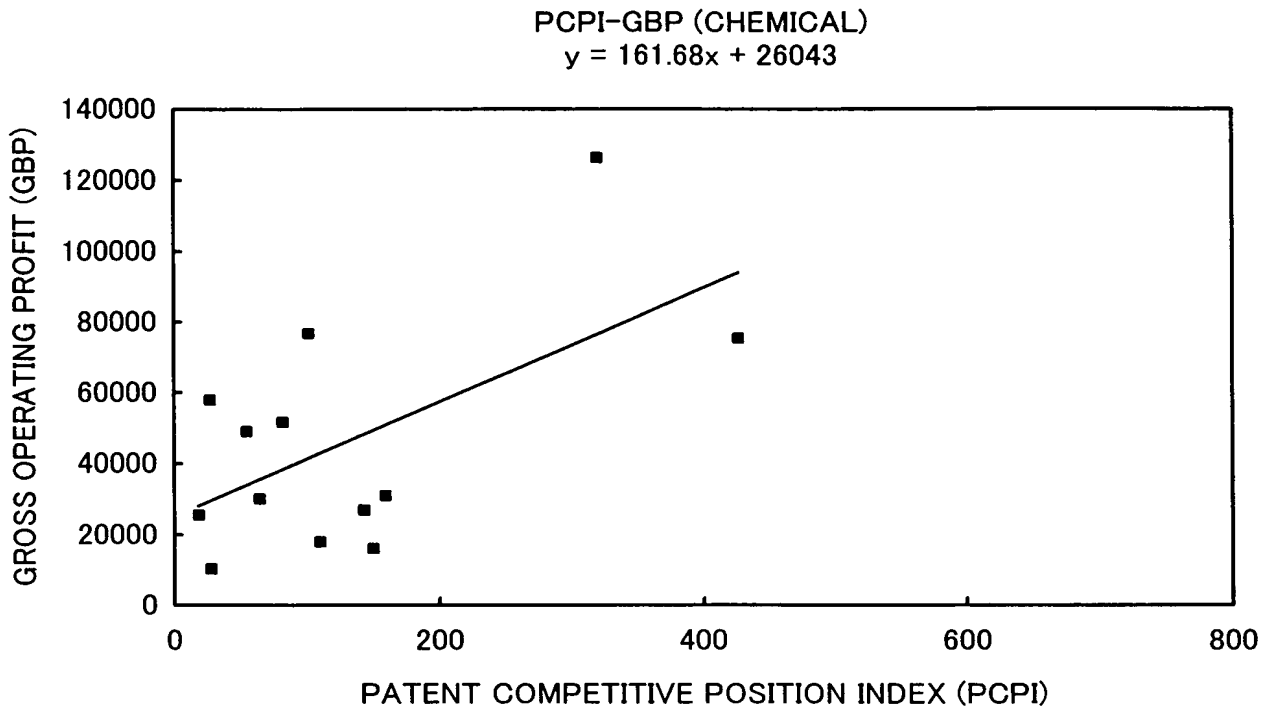

PCPI-GBP (CHEMICAL)
y = 161.68x + 26043
GROSS OPERATING PROFIT (GBP)
140000
120000
100000
80000
60000
40000
20000
0
0
200
400
600
800
PATENT COMPETITIVE POSITION INDEX (PCPI)

FIG. 39

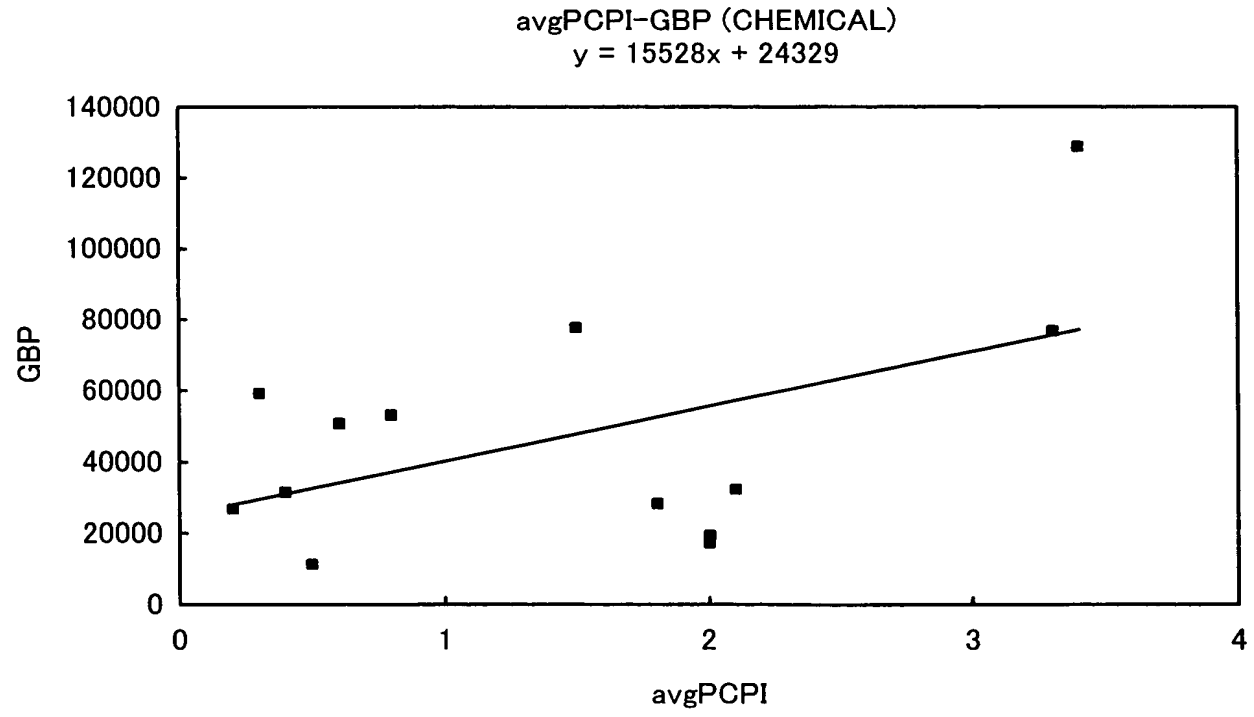

avgPCPI-GBP (CHEMICAL)
y = 15528x + 24329
GBP
140000
120000
100000
80000
60000
40000
20000
0
0
1
2
3
4
avgPCPI

FIG. 40

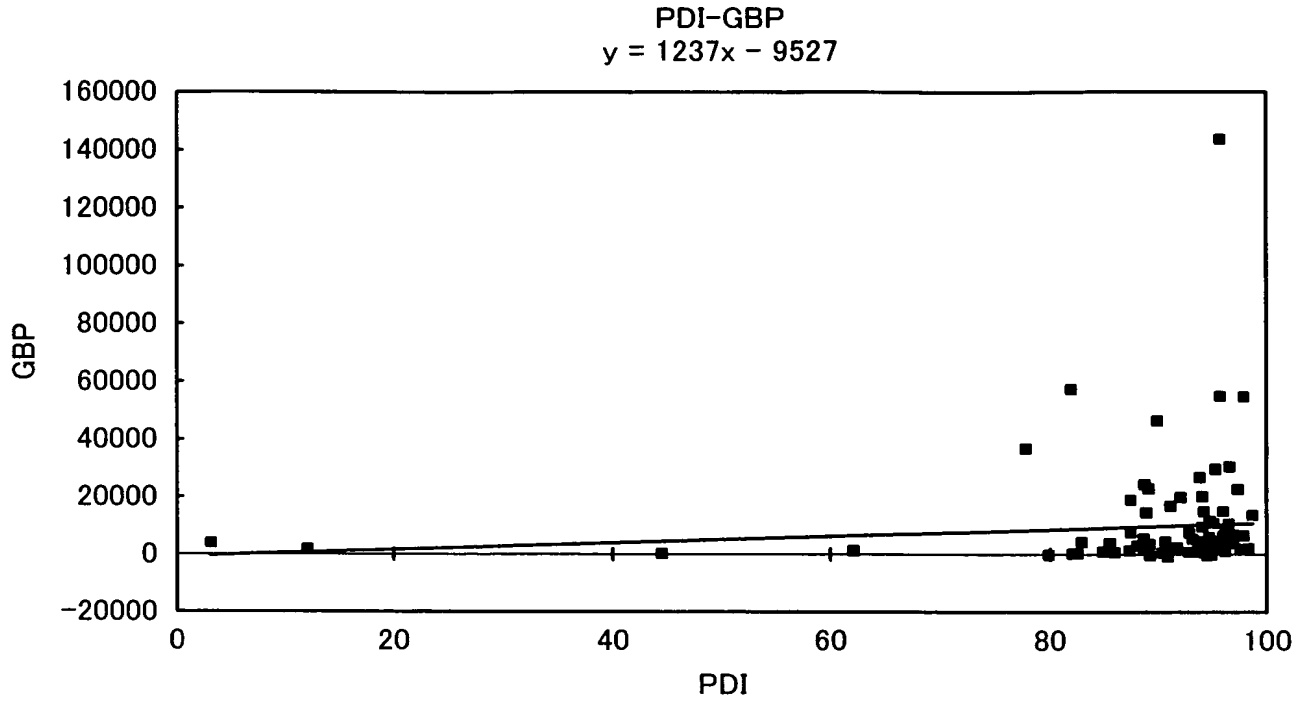

PDI-GBP
y = 1237x - 9527
160000
140000
120000
100000
80000
60000
40000
20000
0
-20000
GBP
0
20
40
60
80
100
PDI

FIG. 41

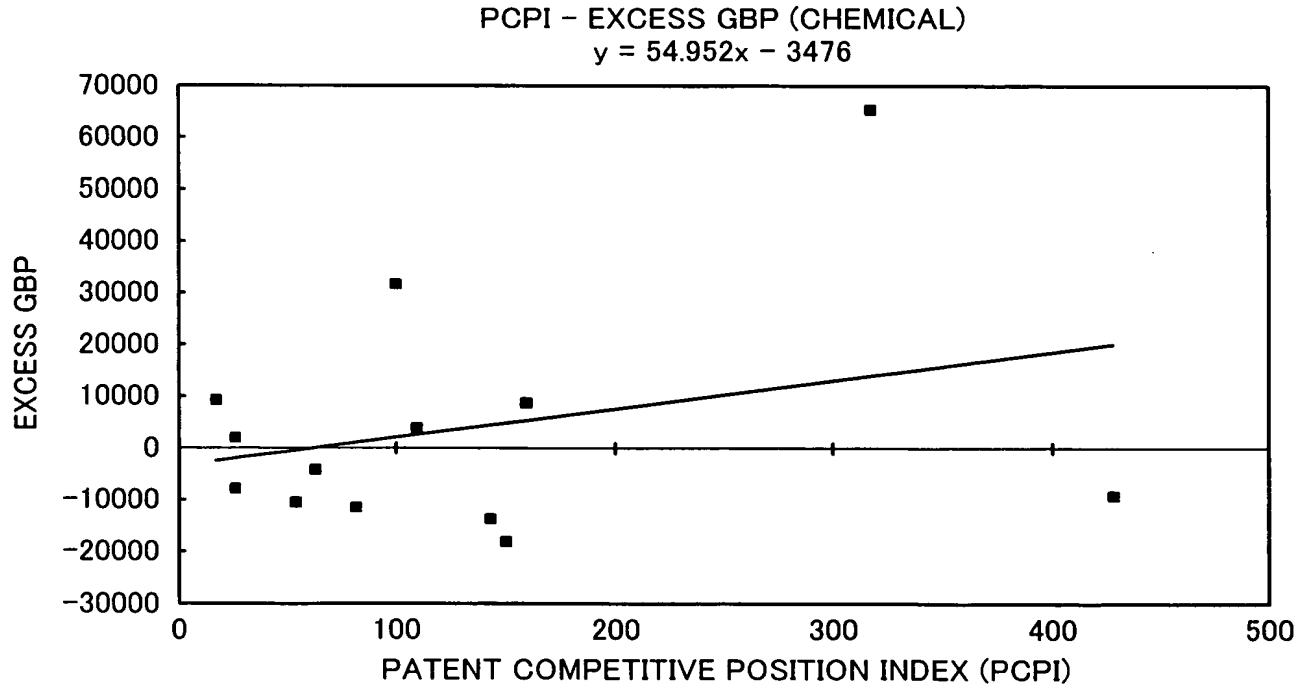

PCPI - EXCESS GBP (CHEMICAL)
y = 54.952x - 3476
70000
60000
50000
40000
30000
20000
10000
0
-10000
-20000
-30000
EXCESS GBP
0
100
200
300
400
500
PATENT COMPETITIVE POSITION INDEX (PCPI)

FIG. 42

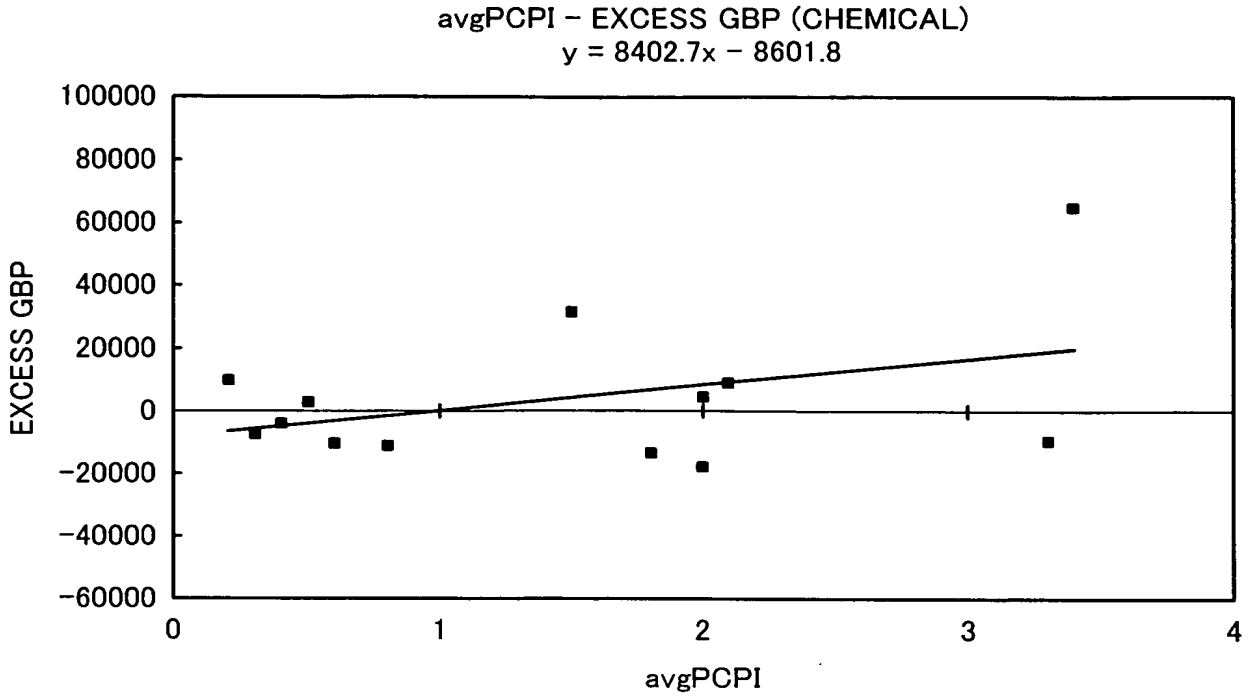
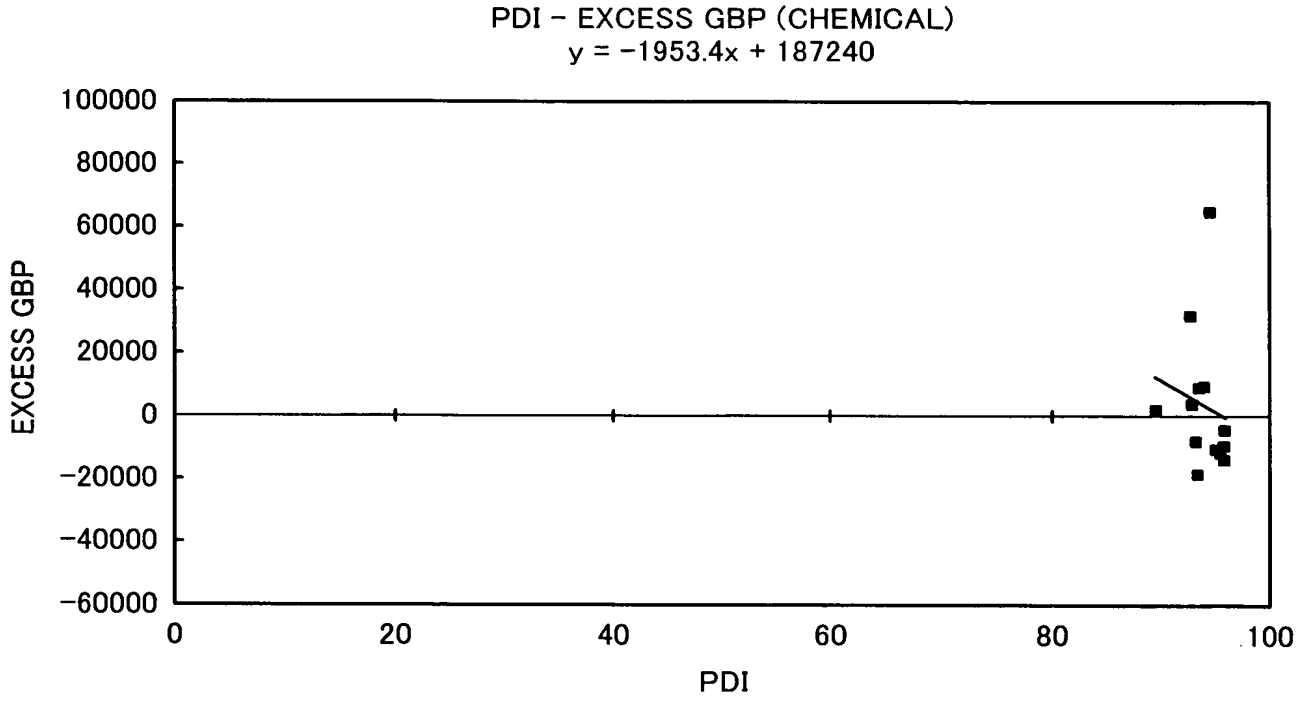

avgPCPI – EXCESS GBP (CHEMICAL)
y = 8402.7x – 8601.8
100000
80000
60000
40000
20000
0
-20000
-40000
-60000
EXCESS GBP
0
1
2
3
4
avgPCPI

FIG. 43


PDI – EXCESS GBP (CHEMICAL)
y = -1953.4x + 187240
100000
80000
60000
40000
20000
0
-20000
-40000
-60000
EXCESS GBP
0
20
40
60
80
100
PDI